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## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Lisa V. Cook Examiner #: 97134 Date: 3/13/03  
 Art Unit: 1641 Phone Number 305-0808 Serial Number: 01273 444  
 Mail Box and Bldg/Room Location: 071 742 Results Format Preferred (circle): PAPER DISK E-MAIL  
444 071 742-17

If more than one search is submitted, please prioritize searches in order of need. MEJ

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Compositions and Methods for Early Pregnancy Diagnosis  
 Inventors (please provide full names): Robert Michael Roberts, Jonathan Andrew Green,  
Sargam Xie.

Earliest Priority Filing Date: 3/24/98

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Sequence: Search + Interference Search  
for Seq. Id NO: 32 BOPAG 9.  
bovine pregnancy associated antigen.

Please also see attached claims + bib sheet.

Thanks, ☺  
 O'Lisa C.

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 MAR 13 2003  
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Point of Contact:  
 Toby Port  
 Technical Info. Specialist  
 CMT 6A04  
 703-308-3534

## STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: _____	NA Sequence (#) _____	STN <u>274</u>
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Date Searcher Picked Up: <u>3/17</u>	Bibliographic _____	Dr Link _____
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Searcher Prep & Review Time: <u>10</u> / <u>20</u>	Fulltext _____	Sequence Systems _____
Critical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>10</u> / <u>2470</u>	Other _____	Other (specify) _____

PTO-1590 (8-01)

=> file caplus; d que l17; d que l18; d que l19; d que l24; d que l27  
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FILE COVERS 1907 - 2 Apr 2003 VOL 138 ISS 14  
 FILE LAST UPDATED: 1 Apr 2003 (20030401/ED)

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L6	47995	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	CATTLE/CW
L7	3046	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	RUMINANT/CT
L8	66	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOVIDAE/CT
L16	25	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	TEST KITS/CT (L) PREGN?
L17	2	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L16 AND (L6 OR L7 OR L8)
L5	5	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOPAG?
L11	47611	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	PREGNANCY/CT
L18	2	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L5 AND L11
L3	46	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	PREGNANCY (5A) ASSOCIAT? (2A)
L4	58733	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	PAG#
L5	5	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOPAG?
L6	47995	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	CATTLE/CW
L7	3046	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	RUMINANT/CT
L8	66	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOVIDAE/CT
L10	860	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	GLYCOPROTEINS/CW (L) PREGNAN?
L14	23	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	(L3 OR L4 OR L5) AND (L6 OR L7 OR L8) AND L10
L19	4	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	L14 AND BIOCHEMICAL METHODS/SC, SX
L3	46	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	PREGNANCY (5A) ASSOCIAT? (2A)
L4	58733	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	PAG#
L5	5	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOPAG?
L6	47995	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	CATTLE/CW
L7	3046	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	RUMINANT/CT
L8	66	SEA	FILE=CAPLUS	ABB=ON	PLU=ON	BOVIDAE/CT

L10	860	SEA FILE=CAPLUS ABB=ON	PLU=ON	GLYCOPROTEINS/CW (L) PREGNAN?
L20	4414	SEA FILE=CAPLUS ABB=ON	PLU=ON	EARLY PREGN?
		SEA FILE=CAPLUS ABB=ON	PLU=ON	(L3 OR L4 OR L5) AND (L6 OR L7 OR L8) AND L10 AND L20

  

L3	46	SEA FILE=CAPLUS ABB=ON	PLU=ON	PREGNANCY (5A) ASSOCIAT? (2A) ANTIGEN
L4	58733	SEA FILE=CAPLUS ABB=ON	PLU=ON	PAG#
L5	5	SEA FILE=CAPLUS ABB=ON	PLU=ON	BOPAG?
L6	47995	SEA FILE=CAPLUS ABB=ON	PLU=ON	CATTLE/CW
L7	3046	SEA FILE=CAPLUS ABB=ON	PLU=ON	RUMINANT/CT
L8	66	SEA FILE=CAPLUS ABB=ON	PLU=ON	BOVIDAE/CT
L20	4414	SEA FILE=CAPLUS ABB=ON	PLU=ON	EARLY PREGN?
L25	15	SEA FILE=CAPLUS ABB=ON	PLU=ON	(L3 OR L4 OR L5) AND (L6 OR L7 OR L8) AND L20
	11	SEA FILE=CAPLUS ABB=ON	PLU=ON	L25 AND (CONCEPTUS OR EARLY OR RETINOL OR ALPHA)/TI

=> s 117 or 118 or 119 or 124 or 127  
 L74 17 B17 OR L18 OR L19 OR L24 OR L27

=> file medline; d que 133; d que 137; d que 140  
 FILE 'MEDLINE' ENTERED AT 18:21:46 ON 02 APR 2003

FILE LAST UPDATED: 2 APR 2003 (20030402/UP). FILE COVERS 1958 TO DATE.

On June 9, 2002, MEDLINE was reloaded. See HELP RLOAD for details.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2003 vocabulary. See <http://www.nlm.nih.gov/mesh/summ2003.html> for a description on changes.

This file contains CAS Registry Numbers for easy and accurate substance identification.

L28	209481	SEA FILE=MEDLINE ABB=ON	PLU=ON	CATTLE/CT
L29	1227	SEA FILE=MEDLINE ABB=ON	PLU=ON	RUMINANTS/CT
L31	25	SEA FILE=MEDLINE ABB=ON	PLU=ON	PREGNANCY ANTIGEN/CN
L33	0	SEA FILE=MEDLINE ABB=ON	PLU=ON	(L28 OR L29) AND L31

L37	4	SEA FILE=MEDLINE ABB=ON	PLU=ON	BOPAG?
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L28	209481	SEA FILE=MEDLINE ABB=ON	PLU=ON	CATTLE/CT
L29	1227	SEA FILE=MEDLINE ABB=ON	PLU=ON	RUMINANTS/CT
L30	15151	SEA FILE=MEDLINE ABB=ON	PLU=ON	PREGNANCY, ANIMAL/CT
L32	365111	SEA FILE=MEDLINE ABB=ON	PLU=ON	GLYCOPROTEINS+NT/CT
L35	493184	SEA FILE=MEDLINE ABB=ON	PLU=ON	EARLY
L36	257	SEA FILE=MEDLINE ABB=ON	PLU=ON	(L28 OR L29) AND L30 AND L35
L40	10	SEA FILE=MEDLINE ABB=ON	PLU=ON	(L28 OR L29) AND L36 AND L32

=> s 137 or 140  
 L75 14 L37 OR L40

=> file embase; d que 150  
FILE 'EMBASE' ENTERED AT 18:22:27 ON 02 APR 2003  
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FILE COVERS 1974 TO 27 Mar 2003 (20030327/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

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L41	79000	SEA FILE=EMBASE ABB=ON	PLU=ON	CATTLE+NT/CT
L42	116792	SEA FILE=EMBASE ABB=ON	PLU=ON	BOVIDS+NT/CT
L43	10131	SEA FILE=EMBASE ABB=ON	PLU=ON	PREGNAN? (5A) EARLY
L45	149810	SEA FILE=EMBASE ABB=ON	PLU=ON	GLYCOPROTEIN+NT/CT
L46	52	SEA FILE=EMBASE ABB=ON	PLU=ON	PREGNANCY (3A) ASSOCIATED (3A) ANTIGEN
L47	3	SEA FILE=EMBASE ABB=ON	PLU=ON	BOPAG?
L49	11	SEA FILE=EMBASE ABB=ON	PLU=ON	(L41 OR L42) AND L43 AND (L45 OR L46 OR L47)
L50	4	SEA FILE=EMBASE ABB=ON	PLU=ON	L49 AND (PAG OR EARLY)/TI

=> file biosis; d que 160; d que 161; d que 162; d que 164  
FILE 'BIOSIS' ENTERED AT 18:22:48 ON 02 APR 2003  
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FILE COVERS 1969 TO DATE.  
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT  
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 26 March 2003 (20030326/ED)

L51	87052	SEA FILE=BIOSIS ABB=ON	PLU=ON	CATTLE
L52	12088	SEA FILE=BIOSIS ABB=ON	PLU=ON	RUMINANT
L53	479700	SEA FILE=BIOSIS ABB=ON	PLU=ON	BOVID? OR BOVINE
L55	5	SEA FILE=BIOSIS ABB=ON	PLU=ON	BOPAG?
L58	10179	SEA FILE=BIOSIS ABB=ON	PLU=ON	PREGN? (5A) EARLY
L60	1	SEA FILE=BIOSIS ABB=ON	PLU=ON	(L51 OR L52 OR L53) AND L58 AND L55
L51	87052	SEA FILE=BIOSIS ABB=ON	PLU=ON	CATTLE
L53	479700	SEA FILE=BIOSIS ABB=ON	PLU=ON	BOVID? OR BOVINE
L57	69	SEA FILE=BIOSIS ABB=ON	PLU=ON	PREGNANCY (3A) ASSOCIATED (3A) ANTIGEN
L61	2	SEA FILE=BIOSIS ABB=ON	PLU=ON	L51 AND L53 AND L57
L55	5	SEA FILE=BIOSIS ABB=ON	PLU=ON	BOPAG?
L62	4	SEA FILE=BIOSIS ABB=ON	PLU=ON	L55 NOT RABBIT/TI
L51	87052	SEA FILE=BIOSIS ABB=ON	PLU=ON	CATTLE

L52 12088 SEA FILE=BIOSIS ABB=ON PLU=ON RUMINANT  
 L53 479700 SEA FILE=BIOSIS ABB=ON PLU=ON BOVID? OR BOVINE  
 L54 95490 SEA FILE=BIOSIS ABB=ON PLU=ON GLYCOPROTEIN?  
 L58 10179 SEA FILE=BIOSIS ABB=ON PLU=ON PREGN? (5A) EARLY  
 L63 29 SEA FILE=BIOSIS ABB=ON PLU=ON (L51 OR L52 OR L53) AND L54  
 AND L58  
 L64 ; 17. SEA FILE=BIOSIS ABB=ON PLU=ON L63 AND (EARLY OR DIAGNOSIS OR  
 SPECIFIC OR PAG OR OPAG OR GLYCOSYL? OR RUMINANTS)/TI

=> s l60 or l61 or l62 or l64

L76 22 L60 OR L61 OR L62 OR L64

=> file wpids; d que l67; d que l69; d que l73

FILE 'WPIDS' ENTERED AT 18:23:31 ON 02 APR 2003

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FILE LAST UPDATED: 2 APR 2003 <20030402/UP>  
 MOST RECENT DERWENT UPDATE: 200322 <200322/DW>  
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L67 ; 1 SEA FILE=WPIDS ABB=ON PLU=ON BOPAG?

L69 0 SEA FILE=WPIDS ABB=ON PLU=ON PREGNANCY (3A) ASSOCIATED (3A)  
 ANTIGEN

L65 22777 SEA FILE=WPIDS ABB=ON PLU=ON CATTLE OR COW OR RUMINANT OR  
 BOVINE OR BOVID?  
 L66 215 SEA FILE=WPIDS ABB=ON PLU=ON PREGN? (5A) EARLY  
 L70 31 SEA FILE=WPIDS ABB=ON PLU=ON L65 AND L66  
 L72 16 SEA FILE=WPIDS ABB=ON PLU=ON L70 AND (DOMESTIC OR FARM OR  
 SERUM OR LABEL OR POLYPEPTIDES OR MONOCLONAL OR MILK)/TI  
 L73 13 SEA FILE=WPIDS ABB=ON PLU=ON L72 NOT (HYBRIDOMA OR CONGLUTIN?  
 OR MUS)/TI

=> s l67 or l73

L77 13 L67 OR L73

=> dup rem l75 l74 l50 l76 l77

FILE 'MEDLINE' ENTERED AT 18:24:21 ON 02 APR 2003

FILE 'CAPLUS' ENTERED AT 18:24:21 ON 02 APR 2003

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PROCESSING COMPLETED FOR L74  
PROCESSING COMPLETED FOR L50  
PROCESSING COMPLETED FOR L76  
PROCESSING COMPLETED FOR L77

L78: 56 DUP REM L75 L74 L50 L76 L77 (14 DUPLICATES REMOVED)

ANSWERS '1-14' FROM FILE MEDLINE  
ANSWERS '15-28' FROM FILE CAPLUS  
ANSWERS '29-32' FROM FILE EMBASE  
ANSWERS '33-44' FROM FILE BIOSIS  
ANSWERS '45-56' FROM FILE WPIDS

=> d ibib ab 178 1-56

L78 ANSWER 1 OF 56 MEDLINE DUPLICATE 1

ACCESSION NUMBER: 2003021392 IN-PROCESS

DOCUMENT NUMBER: 22415929 PubMed ID: 12527076

TITLE: Double radial immunodiffusion as a tool to identify pregnancy-associated glycoproteins in ruminant and nonruminant placentae.

AUTHOR: El Amiri Bouchra; Melo de Sousa Noelita; Mecif Khira; Desbuleux Henri; Banga-Mboko Henri; Beckers Jean Francois  
CORPORATE SOURCE: Department of Physiology of Reproduction, Faculty of Veterinary Medicine, University of Liege, Bd de Colonster No. 20 B41, B4000, Sart Tilman, Belgium.

SOURCE: THERIOGENOLOGY, (2003 Mar) 59 (5-6) 1291-301.

Journal code: 0421510. ISSN: 0093-691X.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: IN-PROCESS; NONINDEXED; Priority Journals

ENTRY DATE: Entered STN: 20030116

Last Updated on STN: 20030116

AB Pregnancy-associated glycoproteins (PAGs) are antigens synthesized in the superficial layers of the ruminant trophoblast. Initially, they were identified either as proteins released into the maternal bloodstream (where they have applications in pregnancy diagnosis) (PAG1) or as molecules binding to the LH receptor (PAG2). In this study, double radial immunodiffusion was used to test the ability of antisera raised against different PAG molecules (bovine, ovine and caprine) to react with placental extracts from nonruminants (rabbit, cat, mouse, pig, and wild pig) and ruminants (cow, ewe, and goat). Placental extracts from all nonruminants tested except rabbit reacted with anti bovine PAG2 (anti-boPAG2). Extracts of ruminant placentas reacted with different antisera, confirming the expression of various PAG molecules. According to the time at which the placentas were collected (early or middle pregnancy), the reaction differed as regards the thickness, position, and number of precipitation lines, suggesting that PAG expression varies as pregnancy progresses. Bos indicus and Bos taurus placental extracts

exhibited different reactions with anti-boPAG2: a single precipitation line in the former case and two lines in the latter. This suggests differential expression of boPAG2 related glycoproteins in these two subspecies.

L78 ANSWER 2 OF 56 MEDLINE MEDLINE DUPLICATE 2  
 ACCESSION NUMBER: 2001504042 MEDLINE  
 DOCUMENT NUMBER: 21437879 PubMed ID: 11553911  
 TITLE: Gene for porcine pregnancy-associated glycoprotein 2 (poPAG2): its structural organization and analysis of its promoter.  
 AUTHOR: Szafranska B; Miura R; Ghosh D; Ezashi T; Xie S; Roberts R M; Green J A  
 CORPORATE SOURCE: Department of Animal Sciences, University of Missouri-Columbia, Columbia, Missouri 65211, USA.  
 CONTRACT NUMBER: R37 HD21896 (NICHHD)  
 SOURCE: MOLECULAR REPRODUCTION AND DEVELOPMENT, (2001 Oct) 60 (2) 137-46.  
 Journal code: 8903333. ISSN: 1040-452X.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 OTHER SOURCE: GENBANK-U39198; GENBANK-U39199; GENBANK-U39762; GENBANK-U39763; GENBANK-U41421; GENBANK-U41422; GENBANK-U41423; GENBANK-U41424  
 ENTRY MONTH: 200203  
 ENTRY DATE: Entered STN: 20010913  
 Last Updated on STN: 20020313  
 Entered Medline: 20020312

AB The pregnancy-associated glycoproteins (PAG) are abundant secretory products of the placental trophoctoderm of ungulate species. They are structurally related to pepsin, having the capability to bind peptides. However, many cannot function as enzymes due to amino acid substitutions in and around the catalytic site. Here, we demonstrate that pigs, like cattle and sheep, but unlike equids, have multiple PAG genes. One of the transcribed porcine PAG (poPAG) genes, the one for poPAG2, was cloned. It had a nine-exon organization similar to that of other mammalian aspartic proteinase genes with an atypical TATA sequence. A total of 1.2 kbp upstream from exon 1 was sequenced. This region shared identity (> 65%) with the promoter regions of the bovine (bo) PAG1, boPAG2 and equine (eq) PAG genes, but not with other aspartyl proteinase genes, including that of pepsinogen A. Nor were there clear similarities to the promoters of other genes with trophoblast-specific expression. Of the different poPAG2 promoter constructs tested in transfection experiments in two human (JAR and JEG3) and one rat (Rcho) choriocarcinoma cell lines, only the shortest (~149 bp) was required to provide full expression of a luciferase reporter. Although this short promoter was not active in Cos-1 and L-929 cells, it was active in CHO cells, a transformed non-trophoblast hamster ovarian cell line. Co-transfection of Ets2 elevated the activity of this short promoter approximately six-fold in JAR cells, but, disruption of the two putative Ets sites did not alter the ability of Ets2 to transactivate the promoter. In the non-trophoblast cell lines, Ets2 failed to elicit any response. Ets2 responsiveness may be a common feature of most or all trophoblast-expressed genes, although in the case of poPAG2, the effect may be indirect.  
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L78 ANSWER 3 OF 56 MEDLINE MEDLINE DUPLICATE 3  
 ACCESSION NUMBER: 2000391364 MEDLINE  
 DOCUMENT NUMBER: 20297004 PubMed ID: 10819764

TITLE: Pregnancy-associated bovine and ovine glycoproteins exhibit spatially and temporally distinct expression patterns during pregnancy.

AUTHOR: Green J A; Xie S; Quan X; Bao B; Gan X; Mathialagan N; Beckers J F; Roberts R M

CORPORATE SOURCE: Department of Animal Sciences, University of Missouri-Columbia, Columbia, Missouri 65211, USA.

SOURCE: BIOLOGY OF REPRODUCTION, (2000 Jun) 62 (6) 1624-31. Journal code: 0207224. ISSN: 0006-3363.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

OTHER SOURCE: GENBANK-AF020506; GENBANK-AF020507; GENBANK-AF020508; GENBANK-AF020509; GENBANK-AF020510; GENBANK-AF020511; GENBANK-AF020512; GENBANK-AF020513; GENBANK-AF020514; GENBANK-AF192330; GENBANK-AF192331; GENBANK-AF192332; GENBANK-AF192333; GENBANK-AF192334; GENBANK-AF192335; GENBANK-AF192336; GENBANK-AF192337; GENBANK-AF192338; GENBANK-L06153; GENBANK-M73961; GENBANK-M73962; GENBANK-U30251; GENBANK-U94789; GENBANK-U94790; GENBANK-U94791; GENBANK-U94792; GENBANK-U94793; GENBANK-U94794; GENBANK-U94795

ENTRY MONTH: 200008

ENTRY DATE: Entered STN: 20000824  
Last Updated on STN: 20000824  
Entered Medline: 20000817

AB The pregnancy-associated glycoproteins (PAG) constitute a large family of recently duplicated genes. They show structural resemblance to pepsin and related aspartic proteinases. A total of 21 bovine (bo) PAG and 9 ovine (ov) PAG cDNA have been identified. Phylogenetic analysis indicated that the PAG are divided into two main groupings that accurately reflect their tissue expression, as determined by in situ hybridization. In the first pattern, represented by ovPAG-2 and **boPAG-2**, -8, -10, and -11 (where the numbering is arbitrary and reflects order of discovery within species), expression occurred throughout the outer epithelial layer of the placenta (trophoblast). The second pattern was predominant localization to binucleate cells. Ribonuclease protection assays, which allow discrimination between closely related transcripts, have shown that the expression of PAG varies in a temporal manner over pregnancy. Of those bovine PAG expressed predominantly in binucleate cells, **boPAG-1**, -6, and -7 are expressed weakly, if at all, by Day 25 placenta, but are present at the middle and end of pregnancy. Others, such as **boPAG-4**, -5, and -9, are expressed at Day 25 and at earlier stages. Although not among the earliest PAG produced by the trophoblast, **boPAG-1** has been used for pregnancy diagnosis, particularly in dairy cows, where there is a major need for a sensitive method capable of detecting pregnancy within 1 mo of conception. It seems likely that some of the newly discovered PAG will be better candidates than PAG-1 for pregnancy diagnosis.

L78 ANSWER 4 OF 56 MEDLINE DUPLICATE 6

ACCESSION NUMBER: 200106090 MEDLINE

DOCUMENT NUMBER: 20106090 PubMed ID: 10641336

TITLE: Pregnancy associated glycoproteins in ruminants: inactive members of the aspartic proteinase family.

AUTHOR: Beckers J F; Drion P V; Garbayo J M; Perenyi Z; Zarrouk A; Sulon J; Remy B; Szenci O

CORPORATE SOURCE: University of Liege, Faculty of Veterinary Medicine, Physiology of Reproduction, Sart-Tilman, Belgium.

SOURCE: ACTA VETERINARIA HUNGARICA, (1999) 47 (4) 461-9. Ref: 42



JOURNAL code: 8406376. ISSN: 0236-6290.  
 PUB. COUNTRY: Hungary  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 General Review; (REVIEW)  
 (REVIEW, TUTORIAL)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 200002  
 ENTRY DATE: Entered STN: 20000218  
 Last Updated on STN: 20000218  
 Entered Medline: 20000210

AB The Pregnancy Associated Glycoproteins (PAGs) presented in this paper are largely expressed in the ruminant placenta. These proteins are classified as probably inactive members of the aspartic proteinase family. Pepsinogen, renin, cathepsin E & D and chymosin are typical members of this family, characterised by the presence of aspartic acids boarding the recognition sites. Secreted in the peripheral blood of the pregnant female from early pregnancy, these proteins can be used in serological tests for establishing different diagnoses. In the veterinary practice, these diagnoses are useful for both pregnancy confirmation and follow-up of trophoblastic function. The first aspect can help breeders in the management of reproduction, while the second one more specifically concerns clinicians and researchers wishing to establish a differential diagnosis of pathologic conditions affecting pregnancy.

L78 ANSWER 5 OF 56 MEDLINE DUPLICATE 7  
 ACCESSION NUMBER: 97084790 MEDLINE  
 DOCUMENT NUMBER: 97084790 PubMed ID: 8931124  
 TITLE: Comparative modelling and analysis of amino acid  
 substitutions suggests that the family of  
 pregnancy-associated glycoproteins includes both active and  
 inactive aspartic proteinases.  
 AUTHOR: Guruprasad K; Blundell T L; Xie S; Green J; Szafranska B;  
 Nagel R J; McDowell K; Baker C B; Roberts R M  
 CORPORATE SOURCE: Department of Crystallography, Birkbeck College, University  
 of London, UK.  
 CONTRACT NUMBER: HD 29483 (NICHD)  
 SOURCE: PROTEIN ENGINEERING, (1996 Oct) 9 (10) 849-56.  
 JOURNAL code: 8801484. ISSN: 0269-2139.  
 PUB. COUNTRY: ENGLAND: United Kingdom  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 OTHER SOURCE: GENBANK-L06151; GENBANK-L06153; GENBANK-L34360;  
 GENBANK-L34361; GENBANK-L38511; GENBANK-M73961;  
 GENBANK-M73962  
 ENTRY MONTH: 199705  
 ENTRY DATE: Entered STN: 19970602  
 Last Updated on STN: 20000303  
 Entered Medline: 19970522

AB The pregnancy-associated glycoproteins (PAGs) are secretory products synthesized by the outer epithelial cell layer (chorion) of the placentas of various ungulate species. The amino acid sequences of eight PAGs have been inferred from cloned cDNA of cattle and sheep, as well as of the non-ruminant pig and horse. We compare the PAG sequences and present results of the three-dimensional models of boPAG-1 and ovPAG-1 that were constructed on the basis of the crystal structures of homologous porcine pepsin and bovine chymosin using a rule-based comparative modelling approach. Further, we compare peptide binding subsites defined by interactions with pepstatin and a decapeptide inhibitor (CH-66) modelled on the basis of crystal structures of other aspartic proteinases.

We have extended our analysis of the peptide binding subsites to the other PAG molecules of known sequence by aligning the PAG sequences to the structural template derived from the pepsin family and by making use of the three-dimensional models of the **boPAG-1** and **ovPAG-1**. The residues that are likely to affect peptide binding in the **boPAG-1**, **ovPAG-1** and other PAG molecules have been identified. Sequence comparisons reveal that all PAG molecules may have evolved from a pepsin-like progenitor molecule with the equine PAG most closely related to the pepsins. The presence of substitutions at the S1 and other subsites relative to pepsin make it unlikely that either bovine, ovine or the porcine PAG-1 have catalytic activity. Only two of the eight PAGs examined (porcine PAG-2 and equine PAG-1) retain features of active aspartic proteinases with pepsin-like activity. Our results indicate that in the PAGs so far characterized the peptide binding specificities differ significantly from each other and from pepsin, despite their high sequence identities. Analysis of the various peptide binding subsites demonstrates why both bovine and ovine PAG-1 are capable of binding pepstatin. The strong negative charge in the binding cleft of **boPAG-1** and **ovPAG-1** indicates a preference for lysine- or arginine-rich peptides. PAGs represent a family where the possible peptide binding function may be retained through their binding specificities, but where the catalytic activity may be lost in some cases, such as the **boPAG-1**, **ovPAG-1** and the **poPAG-1**.

L78	ANSWER 6 OF 56	MEDLINE	DUPLICATE 10
ACCESSION NUMBER:	92190402	MEDLINE	
DOCUMENT NUMBER:	92190402	PubMed ID: 1547318	
TITLE:	Radioimmunoassay of a bovine pregnancy-associated glycoprotein in serum: its application for pregnancy diagnosis.		
AUTHOR:	Zoli A P; Guilbault L A; Delahaut P; Ortiz W B; Beckers J F		
CORPORATE SOURCE:	Departement d'Endocrinologie et de Reproduction Animales (Unité de Recherche IRSIA), Faculté de Médecine Vétérinaire, Université de l'Etat à Liège, Belgique.		
SOURCE:	BIOLOGY OF REPRODUCTION, (1992 Jan) 46 (1) 83-92. Journal code: 0207224. ISSN: 0006-3363.		
PUB. COUNTRY:	United States		
DOCUMENT TYPE:	Journal; Article; (JOURNAL ARTICLE)		
LANGUAGE:	English		
FILE SEGMENT:	Priority Journals		
ENTRY MONTH:	199204		
ENTRY DATE:	Entered STN: 19920509 Last Updated on STN: 19920509 Entered Medline: 19920420		

AB A sensitive and specific double-antibody RIA for a bovine pregnancy-associated glycoprotein (bPAG) is described. The limit of detection was 0.2 ng/ml. The assay was specific for bPAG in that pituitary and placental gonadotropic hormones and other placental or serum proteins assayed in serial dilutions did not cross-react. The RIA allowed measurement of bPAG in placental extracts, fetal serum, fetal fluids, and serum or plasma of pregnant cows. About 20% of unbred heifers and nonpregnant cows had detectable levels ranging from 0.30 +/- 0.09 to 0.50 +/- 0.17 ng/ml (mean +/- SD), and 15% of bull sera showed higher concentrations (3.01 +/- 1.73 ng/ml) of bPAG or bPAG-like protein. Variations among animals was observed in fetal serum bPAG concentrations. Bovine PAG was detected in maternal peripheral blood at Day 22 of pregnancy (mean +/- SD, 0.38 +/- 0.13 ng/ml) in some animals and at Day 30 in all pregnant cows. Peripheral serum bPAG levels increased progressively to 3.60 +/- 1.73 ng/ml (mean +/- SD) at Day 30 of pregnancy, to 24.53 +/- 8.81 ng/ml at Day 120, and to 1551.91 +/- 589.68 ng/ml at Day 270. Peak concentration of bPAG was 2462.42 +/- 1017.88 ng/ml and it occurred 1-5

days prior to parturition. After delivery, bPAG concentrations decreased steadily to 499.63 +/- 267.20 ng/ml at Day 14 postpartum (pp), 10.12 +/- 7.84 ng/ml at Day 60 pp, and 1.44 +/- 1.08 ng/ml at Day 90 pp. The undetectable concentration (less than 0.20 ng/ml) was reached by Day 100 +/- 20 pp. An investigation undertaken in Holstein heifers, Holstein cows, and Hereford cows used as recipients for purebred Holstein embryos supplied evidence of the influence of breed of recipient and sex of fetuses on peripheral concentrations of bPAG. A herd of 430 Holstein-Friesian heifers that had received transferred embryos were bled at Day 35 postestrus (pe) for measurement of bPAG. The bPAG was detected in 287 of 430 serum samples analyzed. By rectal palpation performed at Day 45 pe, 267 heifers with detectable levels of bPAG at Day 35 pe were confirmed to be pregnant as were 3 of 143 heifers previously diagnosed as not pregnant by RIA. These results suggest that detection of this placental-specific antigen in the serum could be used as a specific serological method for **early** pregnancy diagnosis in cattle from 28 days after breeding.

L78 ANSWER 7 OF 56 MEDLINE DUPLICATE 11  
 ACCESSION NUMBER: 87311435 MEDLINE  
 DOCUMENT NUMBER: 87311435 PubMed ID: 3625605  
 TITLE: Serological detection of **early** pregnancy in cattle and partial characterization of a serum glycoprotein associated with **early** pregnancy.  
 AUTHOR: Klima F; Tiemann U; Pitra C; Kauffold P  
 SOURCE: JOURNAL OF REPRODUCTIVE IMMUNOLOGY, (1987 May) 11 (1) 31-9. Journal code: 8001906. ISSN: 0165-0378.  
 PUB. COUNTRY: Netherlands  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 198710  
 ENTRY DATE: Entered STN: 19900305  
 Last Updated on STN: 19900305  
 Entered Medline: 19871015

AB Sera from heifers prior to artificial insemination (AI), 1-8 days after AI, and 7 days after embryo removal were investigated by crossed immunoelectrophoresis (CIE) by use of rabbit antiserum produced against bovine **early** pregnancy serum and intensively absorbed with non-pregnancy serum. One precipitation peak appeared in the alpha-globulin region when sera of non-pregnant heifers were under study. An additional peak could be demonstrated in the same region when sera of **early** pregnant heifers were investigated. By this method 91.5% of 71 sera samples were classified correctly to be pregnant or non-pregnant. The glycoprotein character of the above two serum components could be shown by binding to concanavalin A (Con A) in lectin affinity CIE. Relative molecular weights were estimated to be about 70,000 and 80,000 for the peptides of these two proteins applying sodium dodecyl sulfate polyacrylamide gel electrophoresis of precipitates cut out from CIE-plates. As shown previously close relation of this **early** pregnancy associated protein (EPAP) to the **early** pregnancy factor is supposed because of its characteristics and its ability to affect cellular immunity.

L78 ANSWER 8 OF 56 MEDLINE  
 ACCESSION NUMBER: 95349003 MEDLINE  
 DOCUMENT NUMBER: 95349003 PubMed ID: 7623312  
 TITLE: Inhibin and activin in embryonic and fetal development in ruminants.  
 AUTHOR: Jenkin G; McFarlane J; de Kretser D M  
 CORPORATE SOURCE: Department of Physiology, Monash University, Clayton,

SOURCE: Victoria, Australia.  
 JOURNAL OF REPRODUCTION AND FERTILITY. SUPPLEMENT, (1995)  
 49 177-86. Ref: 53  
 Journal code: 0225652. ISSN: 0449-3087.

PUB. COUNTRY: ENGLAND: United Kingdom  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 General Review; (REVIEW)  
 (REVIEW, ACADEMIC)

LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199508  
 ENTRY DATE: Entered STN: 19950911  
 Last Updated on STN: 19950911  
 Entered Medline: 19950828

AB Inhibin, activin and follistatin are protein hormones with diverse physiological roles. The involvement of inhibin in the regulation of pituitary FSH production and secretion in adult males and non-pregnant females is well established. However, it is unlikely that inhibin plays a similar role in pregnancy in ruminants. Inhibin and activin molecules show a high degree of structural similarity to potent growth and differentiation factors of the transforming growth factor beta (TGF-beta) superfamily of peptides and their localization in a range of embryonic and fetal tissues indicates that they may thus play a role in development. Furthermore, the demonstration that follistatin is also present in a number of embryonic and fetal tissues and fluids has further implications for the actions of activin to which it binds. The role of inhibin, activin and follistatin in **early** development has yet to be established since gene knockout experiments have so far proved inconclusive. During mid- and late gestation, high concentrations of inhibin are found in the testes and plasma of male fetuses of sheep and cattle. Inhibin may play a role in regulating pituitary FSH release in late pregnancy, but the very high concentrations of this hormone in ovine fetal testes and in male fetal plasma compared with that observed in the fetal ovary and female fetal plasma has yet to be explained. The recent observation of high concentrations of inhibin, activin and follistatin in amniotic fluid surrounding the fetus is intriguing. Excretion via urine or lung liquid is partly responsible for the presence of these proteins in amniotic fluid. The fetal membranes and the placenta are also possible sources. It remains to be established whether these proteins constitute an inactive pool of secreted hormone or whether they have other actions in this fetal compartment.

L78 ANSWER 9 OF 56 MEDLINE  
 ACCESSION NUMBER: 95113492 MEDLINE  
 DOCUMENT NUMBER: 95113492 PubMed ID: 7814074  
 TITLE: A role for cytokines in **early** pregnancy.  
 AUTHOR: Mathialagan N; Roberts R M  
 CORPORATE SOURCE: Department of Animal Sciences, University of  
 Missouri-Columbia 65211.  
 CONTRACT NUMBER: HD 21896 (NICHD)  
 SOURCE: INDIAN JOURNAL OF PHYSIOLOGY AND PHARMACOLOGY, (1994 Jul)  
 38 (3) 153-62. Ref: 92  
 Journal code: 0374707. ISSN: 0019-5499.

PUB. COUNTRY: India  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 General Review; (REVIEW)  
 (REVIEW, TUTORIAL)

LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199502  
 ENTRY DATE: Entered STN: 19950217

Last Updated on STN: 19950217

Entered Medline: 19950206

AB Cytokines are expressed in a variety of cell types of the reproductive system, although in most instances their functions are not understood. There are, however, a few instances where a role in **early** pregnancy has been established. First, preimplantation conceptuses of ruminant ungulate species, such as cattle, sheep and goat, secrete a unique Type I interferon (IFN-tau). By mechanisms that are still unclear, IFN-tau prevents the destruction of the corpus luteum and hence ensures the continued production of progesterone which is essential for continuation of pregnancy. Most like the IFN-tau prevent luteolysis by modulating the output of a luteolytic hormone, prostaglandin F2 alpha, from the uterus. Despite this involvement in pregnancy, the IFN-tau possess similar antiproliferative and antiviral activities to other Type I IFN, 1 lambda e.g. IFN-alpha. There are 4-5 genes for IFN-tau in sheep and cattle whose promoter regions are highly conserved and distinct from those of other Type I IFN. These genes are not virally inducible and are expressed only in the trophectoderm (outer epithelium of the developing placenta) from the time of blastocyst hatching to implantation. Leukemia inhibitory factor (LIF) is a multi-functional cytokine which is expressed by uterine endometrium of pregnant mice around day 4 of pregnancy. Female mice lacking a functional LIF gene are fertile but their blastocysts fail to implant, strongly implicating the cytokine in maternal control of implantation. Colony stimulating factors (CSF) are a family of proteins (GM-CSF, CSF-1, G-CSF, and IL-3) that stimulate the cellular proliferation and induction of terminal differentiation of hemopoietic progenitor cells. CSF-1 is expressed in the uterine endometrium of the mouse and human during **early** pregnancy and its receptor, fms, is present on trophoblast. The osteopetrotic mouse, which represents a natural "knockout" of the CSF-1 gene, exhibits a low rate of fetal implantation and poor fetal viability. It seems likely that CSF-1 expression by the uterus influences growth and differentiation of the placenta. Although different species may utilize different strategies for ensuring developmental and endocrinological coordination between the embryo and the mother, these three examples illustrate that cytokines are likely to be major participants as autocrine factors that direct the events of **early** pregnancy and not simply as modulators of the maternal immune system.

L78 ANSWER 10 OF 56 MEDLINE

ACCESSION NUMBER: 89306147 MEDLINE

DOCUMENT NUMBER: 89306147 PubMed ID: 2744224

TITLE: Inhibin mRNAs in ovine and bovine ovarian follicles and corpora lutea throughout the estrous cycle and gestation.

AUTHOR: Rodgers R J; Stuchbery S J; Findlay J K

CORPORATE SOURCE: Medical Research Centre, Prince Henry's Hospital, Melbourne, Vic., Australia.

SOURCE: MOLECULAR AND CELLULAR ENDOCRINOLOGY, (1989 Mar) 62 (1) 95-101.

Journal code: 7500844. ISSN: 0303-7207.

PUB. COUNTRY: Netherlands

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 198908

ENTRY DATE: Entered STN: 19900309

Last Updated on STN: 19900309

Entered Medline: 19890818

AB Follicles and corpora lutea were dissected from ovine and bovine ovaries and the RNA extracted and subjected to Northern blot analyses for alpha- and beta A-inhibin mRNAs, using bovine cDNA and cRNA probes. A cDNA probe

detecting mRNA for cholesterol side-chain cleavage cytochrome P-450 (P-450<sub>scc</sub>) was used as a positive control. In cattle, alpha- and beta A-inhibin mRNAs were not detected in ovarian stroma, which could potentially have contained follicles up to 0.5 mm in diameter. Inhibin-alpha and -beta A mRNAs were detected in bovine antral follicles but after ovulation, the relative levels of alpha- and beta A-inhibin mRNAs declined and were undetectable in mature fully developed cyclic corpora lutea and in pregnancy corpora lutea from **early** to late gestation of the cow. In sheep, alpha- and beta A-inhibin mRNAs were detected in a pool of antral follicles but not in cyclic or pregnancy corpora lutea, which did contain P-450<sub>scc</sub> mRNA. It is concluded that in cattle and sheep, follicles and not mature corpora lutea are the ovarian source of inhibin.

L78 ANSWER 11 OF 56 MEDLINE  
 ACCESSION NUMBER: 89062597 MEDLINE  
 DOCUMENT NUMBER: 89062597 PubMed ID: 3196789  
 TITLE: Characterization of a high molecular weight glycoprotein secreted by the peri-implantation bovine conceptus.  
 AUTHOR: Newton G R; Hansen P J; Low B G  
 CORPORATE SOURCE: Department of Dairy Science, University of Florida, Gainesville 32611.  
 CONTRACT NUMBER: HD20671 (NICHHD)  
 SOURCE: BIOLOGY OF REPRODUCTION, (1988 Oct) 39 (3) 553-60.  
 Journal code: 0207224. ISSN: 0006-3363.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 198901  
 ENTRY DATE: Entered STN: 19900308  
 Last Updated on STN: 19970203  
 Entered Medline: 19890118

AB Cow conceptuses were flushed from uteri on Day 17 of pregnancy and cultured with [3H]glucosamine and [14C]leucine. A high molecular weight glycoprotein (HMWG) having an Mr = 765,000 was isolated by a combination of anion-exchange and gel-filtration chromatography. Selective chemical and enzymatic degradations were performed. The HMWG was resistant to Pronase and peptide: N-glycanase F. Only endo-beta-galactosidase and harsh alkaline reducing conditions were successful in dissociating carbohydrate from the protein core, suggesting that carbohydrate chains are N-linked to Asn and contain beta-galactosidic linkages. The intact molecule could bind to an affinity column of Datura stramonium lectin, suggesting the presence of beta(1-4)-linked oligomers of N-acetylglucosamine. The susceptibility of HMWG to endo-beta-galactosidase suggests that at least some of these oligomers are substituted with galactose to form N-acetyllactosamine. Binding of HMWG to lectin could be inhibited partially with N-acetyllactosamine or completely with a mixture of N, N'-diacetylchitobiose and N, N', N''-triacetylchitotriose. In summary, properties of the HMWG suggest it contains lactosaminoglycan components and is almost identical to an HMWG secreted by the Day 16 ovine conceptus. Thus, embryos of these two ruminant species secrete similar molecules during **early** pregnancy.

L78 ANSWER 12 OF 56 MEDLINE  
 ACCESSION NUMBER: 85226677 MEDLINE  
 DOCUMENT NUMBER: 85226677 PubMed ID: 3890969  
 TITLE: Immunosuppressive activity associated with **early** pregnancy in the bovine.  
 AUTHOR: Fisher S J; Gimenez T; Henricks D M  
 SOURCE: BIOLOGY OF REPRODUCTION, (1985 May) 32 (4) 894-906.

Journal code: 0207224. ISSN: 0006-3363.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 198508  
 ENTRY DATE: Entered STN: 19900320  
 Last Updated on STN: 19900320  
 Entered Medline: 19850812

AB Immunosuppressive activity was assessed in uterine flushings (UF) and uterine vein serum and plasma from nonpregnant and **early** -pregnant cows, and in media from the short-term culture of Day 18 bovine embryos. The preparations were tested for their ability to inhibit [3H] thymidine (3H-TdR) incorporation into phytohemagglutinin-stimulated bovine lymphocytes. On Days 2-3 (called Day 3), Days 9-10 (called Day 10), and Days 17-19 (called Day 18) of the estrous cycle (estrus = Day 0) and pregnancy, untreated and superovulated cows were anesthetized and jugular vein and uterine vein blood was collected. The uteri were removed and flushed to obtain UF and embryos. Uterine flushings were concentrated and tested for immunosuppressive activity at 400 micrograms uterine protein/ml culture fluid. Uterine flushings from both Day 18 pregnant and Day 18 nonpregnant cows were immunosuppressive (8/8), whereas Day 10 UF were usually not immunosuppressive (7/10). Day 3 UF were usually stimulatory or only marginally suppressive (8/8). Uterine vein serum and plasma from Day 18 cows were not suppressive when compared to jugular vein serum or plasma from the same cow; neither were Day 18 uterine vein serum or plasma suppressive when compared to those same samples taken from Day 3 cows. Embryo culture media obtained from the 48-h culture of Day 18 embryos was consistently suppressive. The activity was lost after dialysis in 1000-Mr cut-off tubing, removed by charcoal, and reduced by protease digestion. These results suggest two mechanisms whereby the embryo could escape immune rejection: 1) the progesterone-induced secretion of a uterine immunosuppressive substance(s) and 2) the production by the embryo of a low molecular weight immunosuppressive substance(s).

L78 ANSWER 13 OF 56 MEDLINE

ACCESSION NUMBER: 81051820 MEDLINE  
 DOCUMENT NUMBER: 81051820 PubMed ID: 7001192  
 TITLE: Possible mechanism of success of an allotransplantation in nature: mammalian pregnancy.  
 AUTHOR: Mukherjee A B; Laki K; Agrawal A K  
 SOURCE: MEDICAL HYPOTHESES, (1980 Oct) 6 (10) 1043-55.  
 Journal code: 7505668. ISSN: 0306-9877.  
 PUB. COUNTRY: ENGLAND: United Kingdom  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 198101  
 ENTRY DATE: Entered STN: 19900316  
 Last Updated on STN: 19900316  
 Entered Medline: 19810129

AB A new hypothesis is presented to explain the mechanism of non-rejection of a natural allograft: the mammalian fetus during **early** development. Using the rabbit as a model, it is proposed here that uteroglobin (UG., MW. 15,800) synthesized in the uterus during **early** pregnancy, crosslinks with beta 2-microglobulin (part of the H-2 and HL-A antigens) on the embryonic cell surface. This crosslinking is achieved by the enzyme transglutaminase (coagulation factor XIIIa), which has a 4--5 fold increased activity in the uterus during **early** pregnancy. The conversion of pre-uteroglobin (Pre-UG) to uteroglobin (UG) and pro-transglutaminase (factor XIII) to active transglutaminase (factor

XIIIA) is achieved by the concurrent increased activity of proteases present in the uterus at this time. UG is a dimeric protein with two alpha-helices running in parallel and connected by two disulfide bonds. We propose that UG molecules crosslink with beta 2-microglobulin in the presence of transglutaminase (factor XIIIA). A crosslinked beta 2-microglobulin-uterglobin complex is formed which masks the H-2 or HL-A antigen of the implanting embryo. Thus, the maternal lymphocytes do not recognize the fetal cells as foreign. This mechanism may also explain the non-immunogenicity of ejaculated sperm in the uterus, as well as the non-immunogenicity of fetal cells found in the maternal circulation during pregnancy. At later stages of pregnancy, other proteins and/or hormones as well, may play a role in non-rejection of the fetus. However, the beta 2-microglobulin-uterglobin complex masking the transplantation antigens of the embryo may be the major mechanism for immunological protection and non-rejection of the implanting embryo.

L78 ANSWER 14 OF 56 MEDLINE  
 ACCESSION NUMBER: 71283198 MEDLINE  
 DOCUMENT NUMBER: 71283198 PubMed ID: 5568279  
 TITLE: Protein electrophoretic pattern of bovine allantoic fluid during **early** pregnancy.  
 AUTHOR: Hamana K; Hafez E S  
 SOURCE: CORNELL VETERINARIAN, (1971 Jul) 61 (3) 375-80.  
 Journal code: 0074245. ISSN: 0010-8901.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 197111  
 ENTRY DATE: Entered STN: 19900101  
 Last Updated on STN: 19900101  
 Entered Medline: 19711105

L78 ANSWER 15 OF 56 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 5  
 ACCESSION NUMBER: 1999:614262 CAPLUS  
 DOCUMENT NUMBER: 131:225823  
 TITLE: **Early pregnancy** diagnosis using immunoassays for pregnancy-associated glycoproteins  
 INVENTOR(S): Roberts, Robert Michael; Green, Jonathan Andrew; Xie, Sancai  
 PATENT ASSIGNEE(S): The Curators of the University of Missouri, USA  
 SOURCE: PCT Int. Appl., 136 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9947934	A2	19990923	WO 1999-US6038	19990319
WO 9947934	A3	20010719		
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, BG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				



CA 2323812 AA 19990923 CA 1999-2323812 19990319  
 AU 9931028 A1 19991011 AU 1999-31028 19990319  
 EP 1141727 A2 20011010 EP 1999-912715 19990319  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, FI

## PRIORITY APPLN. INFO.:

US 1998-78783P A2 19980320  
 US 1998-106188P A2 19981028  
 WO 1999-US6038 W 19990319

AB Pregnancy-assoc. glycoproteins (**PAGs**) are structurally related to the pepsins, thought to be restricted to the hoofed (ungulate) mammals and characterized by being expressed specifically in the outer epithelial cell layer (chorion/trophoblast) of the placenta. By cloning expressed genes from ovine and bovine placental cDNA libraries, the inventors est. that cattle, sheep, and most probably all ruminant Artiodactyla, possess possibly 100 or more **PAG** genes, many of which are placentally expressed. The **PAGs** are highly diverse in sequence, with regions of hypervariability confined largely to surface-exposed loops. Selected **PAG** that are products of the invasive binucleate cells, expressed highly in **early pregnancy** at the time of trophoblast invasion and expressed weakly, if at all, in late gestation are useful in the early diagnosis of pregnancy. In a preferred embodiment, the invention relates to immunoassays for detecting these **PAGs**.

L78 ANSWER 16 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:965035 CAPLUS  
 DOCUMENT NUMBER: 138:21822  
 TITLE: Determination of pregnancy status  
 INVENTOR(S): Ott, Troy L.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 9 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002192838	A1	20021219	US 2002-166929	20020610
WO 2002103352	A1	20021227	WO 2002-US18479	20020610
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

## PRIORITY APPLN. INFO.:

US 2001-299553P P 20010619

AB A method and kit for detg. whether an animal is not pregnant, or is pregnant following a breeding. The level of expression of a pregnancy induced protein is detd. in an animal for which pregnancy status information is desired and the level is compared to that of the level in animals that are not pregnant.

L78 ANSWER 17 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:424853 CAPLUS  
 DOCUMENT NUMBER: 138:119484

TITLE: Comparison of the ability of three radioimmunoassay to detect pregnancy-associated glycoproteins in bovine plasma

AUTHOR(S): Perenyi, Z. S.; Szenci, O.; Sulon, J.; Drion, P. V.; Beckers, J. F.

CORPORATE SOURCE: Department of Physiology of Reproduction, University of Liege, Liege, Belg.

SOURCE: Reproduction in Domestic Animals (2002), 37(2), 100-104

CODEN: RDANEF; ISSN: 0936-6768

PUBLISHER: Blackwell Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Pregnancy-assocd. glycoproteins (PAGs) constitute a large family of glycoproteins that are synthesized in the superficial layer of the ruminant placenta according to a spatial and temporal expression pattern. When PAGs are released in the maternal blood they can be used for pregnancy diagnosis, pregnancy follow-up and for the monitoring of the trophoblastic function. Three different RIA systems (RIA 1, RIA 2 and RIA 3) using antisera produced against PAG I67 (RIA 1), PAG55 + 62 (RIA 2) and PAG55 + 59 (RIA 3) were used in this investigation in order to measure the PAG concn. in plasma samples withdrawn from pregnant cows and heifers during different periods following artificial insemination (AI). These systems were able to detect PAG mols. in the maternal blood as early as 21 days after AI in different concns. (RIA 1: 0.43 +- 0.24 ng/mL, mean +- SD; RIA 2: 0.48 +- 0.24 ng/mL; RIA 3: 0.64 +- 0.37 ng/mL). On days 32 and 42 RIA 2 (4.30 +- 1.32 ng/mL and 5.56 +- 1.95 ng/mL) and RIA 3 (4.17 +- 1.15 ng/mL and 5.60 +- 1.89 ng/mL) presented significantly ( $p < 0.0001$ ) higher PAG concns. than those of RIA 1 (2.43 +- 0.81 ng/mL and 4.01 +- 1.48 ng/mL), resp. After day 21, significant correlations ( $p < 0.0001$ ;  $r_{\text{gtoreq}} 0.929$ ) were detd. between the three systems. Adnl. the three individual PAG profiles presented in this study showed that PAG mols. secreted in the maternal blood between 21 and 50 days after AI were better recognized by the RIA 2 and RIA 3 systems. This study clearly indicated that the ability of a RIA test to recognize PAG mols. in the maternal blood can be improved by carefully selecting the antiserum.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L78 ANSWER 18 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:11196 CAPLUS

DOCUMENT NUMBER: 130:180431

TITLE: Pregnancy-specific protein B induces release of an alpha chemokine in bovine endometrium

AUTHOR(S): Austin, Kathy J.; King, Cathy P.; Vierk, Judith E.; Sasser, R. Garth; Hansen, Thomas R.

CORPORATE SOURCE: Reproductive Biology Program, Department of Animal Science, University of Wyoming, Laramie, WY, 82071, USA

SOURCE: Endocrinology (1999), 140(1), 542-545

CODEN: ENDOAO; ISSN: 0013-7227

PUBLISHER: Endocrine Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Pregnancy-specific protein B (PSPB), is secreted from binucleate trophoblast of the bovine conceptus as early as day 15 of pregnancy. The objective of this expt. was to det. if PSPB induced uterine proteins. PSPB was purified from day 120 cotyledons using antibody-based affinity chromatog. Endometrium from day 14 non-pregnant cows ( $n = 3$ ) was prepd.

for explant (3H-Leu added) culture. Radiolabeled proteins released into medium were dialyzed, sepd. using 1D-PAGE, and detected using fluorog. and densitometry. PSPB (0, 0.5, 5, 25 & 50 nM) caused a concn.-dependent increase in the release of a radiolabeled 8-kDa uterine protein. Western blots revealed that the 8-kDa protein cross-reacted with antibody against granulocyte chemotactic protein-2 (GCP-2). PSPB also induced release of GCP-2 by bovine endometrial (BEND) cells in primary culture. The induction of GCP-2 by PSPB was blocked by addn. of antiserum against PSPB (1:4 molar ratio). This is the first indication that PSPB has a hormonal role in inducing GCP-2, an alpha chemokine that also is induced by interferon-tau during **early pregnancy**. This chemotactic cytokine may be integral to mediating adhesion, inflammation and angiogenesis assocd. with early implantation.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L78 ANSWER 19 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:556385 CAPLUS

DOCUMENT NUMBER: 129:311432

TITLE: Expression of multiple genes for pregnancy-associated glycoproteins in the sheep placenta

AUTHOR(S): Xie, Sancai; Green, Jonathan; Roberts, R. Michael

CORPORATE SOURCE: Departments of Animal Science, University of

Missouri-Columbia, Columbia, MO, 65211, USA

SOURCE: Advances in Experimental Medicine and Biology (1998),

436(Aspartic Proteinases), 195-200

CODEN: AEMBAP; ISSN: 0065-2598

PUBLISHER: Plenum Publishing Corp.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Bovine pregnancy-assocd. glycoprotein 1 (**boPAG1**), also known as pregnancy-specific protein B was initially identified as a unique placental antigen in cattle by raising antisera against total placental proteins in rabbits. Serol. similar antigens have also been found in sheep and other ruminant ungulates. Mol. cloning showed that bo- and ovine (ov) PAG1 belong to the superfamily of aspartic proteinases, but appear to be enzymically inactive due to key mutations around the catalytic site regions. Soon after the initial cloning of ov- and **boPAG1**, several other PAG were identified. Here, we attempt to est. the no. of PAG-related genes and their products in the ovine placenta. The results of our expts. show that there are many PAG genes in the ovine genome and many of these are expressed in the placenta.

L78 ANSWER 20 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1996:114058 CAPLUS

DOCUMENT NUMBER: 124:143308

TITLE: Ubiquitin cross-reactive protein is released by the bovine uterus in response to interferon during **early pregnancy**

AUTHOR(S): Austin, Kathy J.; Ward, Stephanie K.; Teixeira, Glaucia; Dean, Victoria C.; Moore, David W.; Hansen, Thomas R.

CORPORATE SOURCE: Department of Animal Science, University of Wyoming, Laramie, WY, 82071, USA

SOURCE: Biology of Reproduction (1996), 54(3), 600-6

CODEN: BIREBV; ISSN: 0006-3363

PUBLISHER: Society for the Study of Reproduction

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A 16-kDa protein has been identified that is secreted by the bovine endometrium in response to conceptus-derived interferon (IFN)-tau. during

**early pregnancy.** Because this uterine protein was similar in size to a human ubiquitin cross-reactive protein (hUCRP) that also was regulated by IFN, the authors suspected that they might be related. To test this hypothesis, uterine flushings, medium from cultured endometrium, and endometrial tissues were examd. for the presence of ubiquitin-immunoreactive proteins. Immunoreacting proteins were detected through use of 1-dimensional (1D)-**PAGE** and Western blotting with ubiquitin and hUCRP antiserum (1:500). A 16-kDa protein that cross-reacted with ubiquitin and hUCRP antisera was released by the endometrium and was present in uterine flushings from all day 18 pregnant females examd. The immunoreacting 16-kDa protein was absent in all nonpregnant females examd. Regulation of this uterine protein by recombinant type I IFNs (rbIFN-.tau., rbIFN-.alpha., and roIFN-.tau.), using 0, 0.5, 5, and 25 nm of each IFN, was evaluated in nonpregnant (day 12) heifers using 1D-**PAGE** and Western blotting. Release of the 16-kDa protein into medium was negligible in controls (0 nm IFN). For each IFN, a dose-dependent increase in release of the immunoreacting 16-kDa protein was noted. Thus, the 16-kDa protein that is produced by the endometrium in response to IFN-.tau. during **early pregnancy** also shares epitopes with hUCRP and ubiquitin. The 16-kDa protein has been named bovine UCRP.

L78 ANSWER 21 of 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1994:267773 CAPLUS

DOCUMENT NUMBER: 120:267773

TITLE: Bovine **early pregnancy** factor: its characterization and an attempt to produce anti-bovine EPF antibody

AUTHOR(S): Ito, Kazuei; Yasuda, Yasuhisa

CORPORATE SOURCE: Fac. Agric., Iwate Univ., Morioka, 020, Japan

SOURCE: Journal of Reproduction and Development (1993), 39(4), 309-17

CODEN: JREDEF; ISSN: 0916-8818

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In a previous study, the authors suggested that bovine EPF had a mol. wt. of 21.5 kDa because a 21.5 kDa polypeptide was not found in the nonpregnant serum, and the isoelec. point was near 5.0 by 2D SDS-**PAGE** using non-equil. pH gradient electrophoresis. The authors extended the study to characterize the biochem. nature of purified bovine EPF. As a result, the isoelec. point of bovine EPF turned out to be 6.3 by 2D SDS-**PAGE** using isoelec. focusing. Also, the purified EPF was not reduced by the addn. of 2-mercaptoethanol, indicating that bovine EPF is a monomeric peptide. Amino acid anal. of EPF was attempted, but a definitive sequence could not be confirmed. In the present study, the crude anti-EPF IgG fraction was purified by adsorption with CNBr-activated Sepharose 4B coupled with nonpregnant bovine whole serum. The purified anti-EPF IgG decreased the rosette inhibition titer of pregnant serum from 6 to 3. The Sepharose 4B affinity column coupled with anti EPF-IgG effectively isolated the EPF from pregnant bovine serum.

L78 ANSWER 22 of 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1993:36604 CAPLUS

DOCUMENT NUMBER: 118:36604

TITLE: Characterization and immunolocalization of bovine uterine **retinol**-binding protein

AUTHOR(S): Liu, Kaung H.; Godkin, James D.  
CORPORATE SOURCE: Dep. Anim. Sci., Univ. Tennessee, Knoxville, TN, 37901, USA

SOURCE: Biology of Reproduction (1992), 47(6), 1099-104  
CODEN: BIREBV; ISSN: 0006-3363

DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Endometrial explants obtained from cows on days 13-29 of pregnancy were cultured for 24 h in modified min. essential medium in the presence of [35S]methionine or [3H]leucine. Proteins synthesized and released into medium were analyzed by 2-dimensional PAGE and fluorog. Uterine luminal flushings were obtained from cyclic cows (days 2-20 of estrous cycle) and **early pregnant** cows (days 17-22). Endometrial tissues from cows on days 17 and 29 of pregnancy were prepd. for immunocytochem. A uterine secretory protein, which consisted of 5 isoelec. variants (pI 5.3-6.1) of identical mol. mass (23,000 Da), reacted immunol. with antiserum raised against bovine placental retinol-binding protein (bpRBP). Limited N-terminal sequence anal. of 2 major isoforms showed that the protein had nearly complete homol. with bovine placental and plasma retinol-binding protein (RBP) over the 1st 25 amino acids. Through use of bpRBP antiserum, immunoreactive RBP was detected in uterine flushings collected from cows in the late luteal phase of the estrous cycle and **early pregnancy** by Western blotting, and in medium conditioned by uterine explants prepd. at days 13-29 of pregnancy by immunopptn. Immunoreactive RBP was localized in endometrial surface and glandular epithelium on days 17 and 29 of pregnancy by immunocytochem. These results demonstrate that RBP is a product of bovine uterine tissues. The uterine RBP may play an important role in vitamin A transport between maternal tissues and developing embryos.

L78 ANSWER 23 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1994:294959 CAPLUS

DOCUMENT NUMBER: 120:294959

TITLE: Bovine **early pregnancy** factor:  
purification and biochemical examination

AUTHOR(S): Ito, Kazuei; Yasuda, Yasuhisa

CORPORATE SOURCE: Fac. Agric., Iwate Univ., Morioka, 020, Japan

SOURCE: Journal of Reproduction and Development (1992), 38(6),  
j39-j48

CODEN: JREDEF; ISSN: 0916-8818

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB The isolation and purifn. of **early pregnancy** factor (EPF) in the serum of pregnant bovine is described. The serum of 10.4L was obtained from a pregnant bovine of 8 days after artificial insemination. The rosette inhibition titer (RIT) of the serum was 6. EPF was isolated using the diafiltration, ion-exchange chromatog. (CM-Sepharose, DEAE-Sepharose) and FPLC-gel permeation chromatog. EPF active fraction was recognized in the elute (RIT = 7) of 50 mM NaCl on the CM-Sepharose and the unadsorbed fraction (RIT .gtoreq.8) on the DEAE-Sepharose. The unadsorbed fraction of DEAE-Sepharose had 4 bands by SDS-PAGE anal. The mol. wts. of 4 bands were 23, 22, 21.5, and 21 kDa resp. Further, the fraction No. 32 of the FPLC had a high EPF activity (RIT .gtoreq.8) and the mol. wt. of this fraction was estd. as 21.apprx.22 kDa. The isoelec. point of EPF was .apprx.5.0 by 2D-SDS-PAGE anal.

L78 ANSWER 24 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1988:623277 CAPLUS

DOCUMENT NUMBER: 109:223277

TITLE: Heat stress-induced alterations in the synthesis and secretion of proteins and prostaglandins by cultured bovine **conceptuses** and uterine endometrium

AUTHOR(S): Putney, D. J.; Malayer, J. R.; Gross, T. S.; Thatcher, W. W.; Hansen, P. J.; Drost, M.

CORPORATE SOURCE: Inst. Food Agric. Sci., Univ. Florida, Gainesville,

FL, 32611, USA  
 SOURCE: Biology of Reproduction (1988), 39(3), 717-28  
 CODEN: BIREBV; ISSN: 0006-3363  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The effect of in vitro heat stress on protein and prostaglandin synthesis and secretion by bovine conceptuses and endometrium was examd. Conceptuses and endometrium obtained on Day 17 of pregnancy were cultured at thermoneutral (39.degree., 24 h) or heat stress (39.degree., 6h; 43.degree., 18 h) temps. in medium supplemented with L-[4,5-3H]leucine (100 .mu.Ci) and arachidonic acid (10 .mu.g/mL). Radiolabeled protein secreted into the culture medium increased with time in both groups. Heat stress reduced the incorporation of [3H]leucine into intracellular and secreted proteins by conceptuses but did not alter the incorporation of [3H]leucine by endometrium. In particular, heat stress reduced by 72% the secretion of bovine trophoblast protein-1, the conceptus polypeptide believed to cause extension of the luteal lifespan. Two-dimensional, SDS-PAGE indicated that heat stress altered the array of proteins in endometrial and conceptus tissues, as evidenced by the induction of heat-shock proteins. Endometrial secretion of prostaglandin F and conceptus secretion of PGE2 increased in response to heat stress. The sensitivity of bovine conceptuses and endometrium to heat stress in vitro suggests that infertility assocd. with maternal heat stress may be caused, partially, by alterations in signals required for maintenance of the corpus luteum during **early pregnancy**.

L78 ANSWER 25 OF 56 CAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 1988:202285 CAPLUS  
 DOCUMENT NUMBER: 108:202285  
 TITLE: Characterization of bovine **conceptus** proteins produced during the peri- and postattachment of **early pregnancy**  
 AUTHOR(S): Godkin, James D.; Lifsey, Ben J., Jr.; Gillespie, Barbara E.  
 CORPORATE SOURCE: Dep. Anim. Sci., Univ. Tennessee, Knoxville, TN, 37901-1071, USA  
 SOURCE: Biology of Reproduction (1988), 38(3), 703-11  
 CODEN: BIREBV; ISSN: 0006-3363  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Bovine conceptuses removed from the uterus during the peri- and postattachment periods of placentation (days 17-24 and 26-38, resp.) were cultured in a modified min. essential medium in the presence of L-[3H]leucine to characterize in vitro synthesis of proteins released into the medium. Patterns of protein prodn. were analyzed by 2-dimensional PAGE followed by fluorog. of dried gels. Four groups of low-mol.-wt. acidic proteins (LMWAP) were obsd. to be synthesized during the peri- and postattachment periods. The no. and relative concn. of these changed with development. One group (A) consisted of 3 major and .gtoreq.2 minor isoelec. species (pI .simeq. 5.8-6.8); these were the major synthesized proteins obsd. from days 17-22. The major polypeptides of group A were present at all time points examd. through day 38 and, in several preps., appeared as doublets [mol. wt. (Mr) .simeq. 22,000 and 24,000] through day 29 but not thereafter. Group A polypeptides from day-19 and -36 conceptus cultures were demonstrated by immunoblot anal. to cross-react with antiserum produced against ovine trophoblast protein-1. A 2nd group of proteins (A1) and a single protein (B) in the 20,000-24,000-Mr range were obsd. between days 17 and 22. These were acidic relative to group A and were not detected after day 22. A 4th group (C) of LMWAP (Mr .simeq. 14,000-18,000) was first obsd. around day 21 and appeared to increase relative to group A through day 29. One

protein from this group, C3, was the predominant LMWAP at day 38. Prod'n. of numerous proteins in the 30,000-70,000-Mr range (group E) was first obsd. between days 21 and 24. Three of these, E7, E8, and E9, were acidic (pI .simeq. 5.0-5.8), with apparent mol. wts. of 30,000-45,000, and became prominent secretory products around day 29 and times thereafter. A very large (Mr >200,000) acidic (pI <4.5) protein was present from day 17 through at least day 29, and several large (Mr .gtoreq.100,000) were obsd. around day 24 and afterwards. Group A proteins have been referred to as bovine trophoblast protein-1 and implicated in events assocd. with maternal recognition of pregnancy. The present study is the first to demonstrate continued prodn. of these products beyond day 24, and to report qual. changes obsd. in bovine conceptus protein synthesis during the early postattachment period.

L78 ANSWER 26 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1989:1162 CAPLUS

DOCUMENT NUMBER: 110:1162

TITLE: Evidence for maternal regulation of **early conceptus** growth and development in beef cattle

AUTHOR(S): Garrett, J. E.; Geisert, R. D.; Zavy, M. T.; Morgan, G. L.

CORPORATE SOURCE: Anim. Sci. Dep., Oklahoma State Univ., Stillwater, OK, 74078, USA

SOURCE: Journal of Reproduction and Fertility (1988), 84(2), 437-46

CODEN: JRPFA4; ISSN: 0022-4251

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effects of progesterone administration on conceptus development, survival, and uterine endometrial secretion during **early pregnancy** in cattle was investigated. Fifty-one cyclic beef cows were mated with fertile bulls. At 36 h after the start of estrus, cows were assigned to receive sesame oil (controls) or progesterone (100 mg) on days 1, 2, 3, and 4 of pregnancy. The peripheral plasma concn. of progesterone was measured until slaughter on days 5 or 14. Cows were randomly assigned to be slaughtered on days 5 or 14 or remain intact and palpated per rectum on day 40 to verify pregnancy. Uteri on days 5 and 14 were flushed for recovery of luminal protein and conceptus tissue. Conceptus and endometrial tissues were cultured with [3H]leucine and submitted to 2-dimensional-PAGE and fluorog. Administration of progesterone increased peripheral plasma progesterone concn. on day 2-5. Conceptuses recovered from progesterone-treated cows on day 14 were advanced in development compared to conceptuses from control cows. Conceptuses recovered from progesterone-treated cows were viable as polypeptides assocd. with maintenance of pregnancy in cattle were synthesized and released at an earlier time and pregnancy was maintained beyond day 40. Early progesterone stimulation altered the synthesis and release of polypeptides from endometrial explant cultures on day 5. Apparently, progesterone plays a role in the maternal regulation of conceptus growth and development in **early pregnancy** of cattle.

L78 ANSWER 27 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1985:128366 CAPLUS

DOCUMENT NUMBER: 102:128366

TITLE: **Antigen associated with early detection of mammalian pregnancy**

INVENTOR(S): Sasser, R. Garth; Hamilton, William Clark

PATENT ASSIGNEE(S): Idaho Research Foundation, Inc., USA

SOURCE: Eur. Pat. Appl., 12 pp.

DOCUMENT TYPE: CODEN: EPXXDW  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: 1 English  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 132750	A1	19850213	EP 1984-108365	19840716
EP 132750	B1	19900404		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
US 4554256	A	19851119	US 1983-516173	19830721
AU 8430708	A1	19850124	AU 1984-30708	19840716
AU 567747	B2	19871203		
CA 1235657	A1	19880426	CA 1984-458998	19840716
AT 51709	E	19900415	AT 1984-108365	19840716
US 4705748	A	19871110	US 1985-794932	19851104
PRIORITY APPLN. INFO.:			US 1983-516173	19830721
			EP 1984-108365	19840716

AB **Early pregnancy** in mammals, esp. farm animals and pets, is diagnosed by the detection of protein B, a placental membrane-assocd. protein of mol. wt. 47,000-53,000 and pI .apprx.4.0-4.4, in, e.g., milk, urine, and esp. serum by, e.g., double-antibody RIA. Thus, protein B was obtained from placental membranes of dairy and beef cows by homogenization, (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> pptn., anion-exchange chromatog. on DEAE-cellulose, and gel chromatog. on Bio-Gel A 0.5m. Purified protein B was conjugated to tetanus toxoid for the prodn. of antisera in rabbits and radioiodinated with <sup>125</sup>I for the prepn. of label. The 2nd antibody was sheep antirabbit .gamma.-globulin antiserum. In beef cows, the RIA for protein B agreed with the diagnosis by rectal palpation in 90 of 102 cases. The cut off for a pos. pregnancy test should be at least 0.15 ng and preferably at least .apprx.0.25 ng protein B/mL.

L78 ANSWER 28 OF 56 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1982:1089 CAPLUS

DOCUMENT NUMBER: 96:1089

TITLE: Effects of the estrous cycle and **early pregnancy** on bovine uterine, luteal, and follicular responses

AUTHOR(S): Bartol, F. F.; Thatcher, W. W.; Bazer, F. W.; Kimball, F. A.; Chenault, J. R.; Wilcox, C. J.; Roberts, R. M.  
 CORPORATE SOURCE: Coll. Med., Univ. Florida, Gainesville, FL, 32611, USA  
 SOURCE: Biology of Reproduction (1981), 25(4), 759-76  
 CODEN: BIREBV; ISSN: 0006-3363

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Uterine, luteal, and follicular responses assocd. with the estrous cycle and **early pregnancy** in cattle were examd. Dairy and beef cattle were slaughtered either on day 4, 8, 12, 14, 16, or 19 postestrus (estrus = day 0). Corpus luteum (CL) wt., specific PGF<sub>2</sub>.alpha. [551-11-1] binding by the luteal particulate fraction (100,000 g pellet), in vitro estradiol (I) [50-28-2] prodn. by the 2 largest follicles, total recoverable uterine luminal protein (TP), total recoverable immunoreactive uterine luminal PGF (TPGF), and peripheral plasma steroids were evaluated. In a parallel study, beef cattle were slaughtered either on day 8, 12, 14, 16, or 19 of pregnancy for measurements of TP, TPGF, and plasma steroids. Uterine luminal proteins, from cyclic and pregnant cattle (day 19), were subjected to SDS polyacrylamide gel electrophoresis (SDS-PAGE) for detn. of protein mol. wts. and protein profile characterization. In cyclic cattle, CL regression was not completed by day 19. Follicle I secretion varied among animals within single day (4.0-24.0 ng



I/follicle/3.5 h); but not among several days. Total PGF<sub>2</sub>.alpha. binding (fmol/CL) for days 4, 8, 12, 14, 16, and 19 was 14.29, 145.79, 177.34, 111.82, 174.51, and 199.17 resp. TPGF varied among cycle days 4 (14.4 ng), 8 (13.9 ng), 12 (19.7 ng), 14 (47.7 ng), 16 (17.4 ng), and 19 (111.0 ng). In contrast, TPGF from pregnant cattle was 481.6 and 1187.8 ng on day 16 and 19. TP (mg) in cyclic cattle varied among days 4 (7.34), 8 (7.03), 12 (4.14), 14 (15.92), 16 (5.88), and 19 (11.35). Mean TP (mg) for pregnant cattle ranged 2.73-12.09. Thirty-two protein categories were identified in cyclic cattle uterine flushings by SDS-PAGE (apparent mol. wt. range times. 10-3 = 18.7-292.0). Proteins appeared with greater frequency later in the cycle than earlier (days 14, 16, 19: 60% vs. days 4; 8, 12: 45%). Composite SDS-PAGE profiles from days 8-12 and days 14-16 differed, suggesting luteal phase stimulation of protein secretion. Protein profiles (SDS-PAGE) from day 19 of pregnancy differed from day 19 of the estrous cycle, resembled those of midluteal phase, and revealed 4 protein constituents possibly unique to **early pregnancy**. Thus, uterine luminal PGF increased with luteal phase of the estrous cycle at a time when there appeared to be a stable population of specific PGF<sub>2</sub>.alpha. binding sites in the CL. Higher PGF in utero at days 16 and 19 of pregnancy and changes in TP and SDS-PAGE protein profiles may reflect responsiveness of endometrium to changes in ovarian status (cyclic) and/or conceptus activity (pregnancy comparisons).

L78 ANSWER 29 OF 56 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.DUPLICATE 4  
 ACCESSION NUMBER: 2000398143 EMBASE  
 TITLE: Caprine pregnancy-associated glycoproteins (PAG): Their cloning, expression, and evolutionary relationship to other PAG.  
 AUTHOR: Garbayo J.M.; Green J.A.; Manikkam M.; Beckers J.-F.; Kiesling D.O.; Ealy A.D.; Roberts R.M.  
 CORPORATE SOURCE: R.M. Roberts, Department of Animal Sciences, University of Missouri, 158 ASRC, Columbia, MO 65211, United States. RobertsRM@missouri.edu  
 SOURCE: Molecular Reproduction and Development, (2000) 57/4 (311-322).  
 Refs: 42  
 ISSN: 1040-452X CODEN: MREDEE  
 COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article  
 FILE SEGMENT: 010 Obstetrics and Gynecology  
 021 Developmental Biology and Teratology  
 029 Clinical Biochemistry  
 LANGUAGE: English  
 SUMMARY LANGUAGE: English

AB Pregnancy-associated glycoproteins (PAG) are structurally related to aspartic proteinases and belong to an extensive, rapidly evolving family of recently duplicated genes expressed in the placentas of artiodactyl species. The aim of the present study was to clone PAG from the goat, study their temporal and cell-specific expression, and determine their phylogenetic relationship to PAG from other species. RT-PCR was used to generate PAG cDNA from pooled placental RNA obtained between days 45 and 115 of pregnancy. A total of 11 cDNA, which differed by > 5% from each other, were selected for complete bidirectional sequencing from 60 clones analyzed. A group of nine (caPAG1, caPAG3-7(van) caPAG9-11), which displayed >80% sequence identity with each other, were expressed after day 45 of pregnancy and were localized to trophoblast binucleate cells. These PAG demonstrated an unusually high ratio of nonsynonymous (amino acid changing) to synonymous nucleotide differences. CaPAG2, by contrast, was detectable only in **early pregnancy** (days 18 and 19) and expressed throughout trophoblast. It was of more ancient origin than

the PAG1 group; but more recent than caPAG8. The latter was expressed at all stages examined (days 18 to 115). The data confirm that many PAG genes, with different patterns of temporal and spatial expression, are transcribed in the placenta of the goat. The data also suggest that the recently duplicated PAG genes are being selected for rapid diversification of function. (C) 2000 Wiley-Liss, Inc.

L78 ANSWER 30 OF 56 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.DUPLICATE 8  
 ACCESSION NUMBER: 96070337 EMBASE  
 DOCUMENT NUMBER: 1996070337  
 TITLE: Sulfated glycoprotein-1 (SGP-1) expression in ovine endometrium during the oestrous cycle and **early pregnancy**.  
 AUTHOR: Spencer T.E.; Graf G.H.; Bazer F.W.  
 CORPORATE SOURCE: Dept. of Animal Science, Center for Animal Biotechnology, Texas A and M University, College Station, TX 77843-2471, United States  
 SOURCE: Reproduction, Fertility and Development, (1995) 7/5 (1053-1060).  
 ISSN: 1031-3613 CODEN: RFDEEH  
 COUNTRY: Australia  
 DOCUMENT TYPE: Journal; Article  
 FILE SEGMENT: 021 Developmental Biology and Teratology  
 029 Clinical Biochemistry  
 LANGUAGE: English  
 SUMMARY LANGUAGE: English  
 AB This study determined effects of day of oestrous cycle and **early pregnancy** on sulfated glycoprotein-1 (SGP-1) expression in ovine endometrium. A 364-bp clone of the ovine SGP-1 mRNA was amplified from reverse transcribed Day-15 cyclic endometrial mRNA using the polymerase chain reaction (PCR) and primers specific for the rat SGP-1 mRNA sequence. Nucleotide sequence of the ovine SGP-1 cDNA shared significant identity with rat SGP-1 and human prosaposin. Ewes (n = 40) were hysterectomized on either Day 1, 6, 11, 13 or 15 of the oestrous cycle or on Day 11, 13, 15, 17 or 25 of **early pregnancy**. Total cellular RNA was isolated from endometrium and subjected to Northern and slot blot hybridization analyses using an antisense cRNA probe transcribed from the ovine SGP-1 cDNA clone. A single 2.6-kb mRNA transcript was detected by Northern hybridization analyses. Slot blot hybridization analyses indicated that steady-state levels of endometrial SGP-1 mRNA varied during the oestrous cycle (cubic,  $P < 0.02$ ) and increased between Day 11 and Day 25 of **early pregnancy** (linear,  $P < 0.01$ ). On Days 11, 13 and 15, endometrial SGP-1 mRNA levels were greater in pregnant ewes than in cyclic ewes (day x pregnancy status,  $P < 0.01$ ). Immunohistochemical localization of SGP-1 in uterine tissues with rabbit anti-rat SGP-1 antibody revealed intense immunoreactivity associated primarily with the endometrial epithelium. These results indicate that the ovine endometrium expresses SGP-1, a prosaposin, and that SGP-1 expression varies during the oestrous cycle and is enhanced by the conceptus. The presence of SGP-1 in the endometrium suggests intracellular and extracellular roles for this protein in glycosphingolipid metabolism or transport in the uterine environment.

L78 ANSWER 31 OF 56 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.DUPLICATE 9  
 ACCESSION NUMBER: 93056006 EMBASE  
 DOCUMENT NUMBER: 1993056006  
 TITLE: An estrogen-dependent glycoprotein is synthesized and released from the oviduct in a temporal- and region-specific manner during **early pregnancy** in the ewe.  
 AUTHOR: Murray M.K.

CORPORATE SOURCE: Anatomy/Cellular Biology Department, Tufts University, 136 Harrison Avenue, Boston, MA 02111, United States

SOURCE: Biology of Reproduction, (1993) 48/3 (446-453).  
ISSN: 0006-3363 CODEN: BIREBV

COUNTRY: United States

DOCUMENT TYPE: Journal; Article

FILE SEGMENT: 003 Endocrinology  
021 Developmental Biology and Teratology  
029 Clinical Biochemistry

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Administration of estradiol-17 $\beta$ . (E) to ovariectomized (ovx) sheep results in the synthesis and release of an M(r) 90 000-92 000 glycoprotein into the oviductal lumen and into culture medium of ampullar explants (Biol Reprod 1992; 47:889-902). The objective of this study was to determine when and from what region of the oviduct the M(r) 90 000-92 000 glycoprotein is synthesized and released during **early pregnancy**. Estrous ewes were bred to intact rams of known fertility, and oviducts were obtained at estrus (Day 0) and at Days 1.5, 2, 3, 4, 6, and 16 of pregnancy. Pregnancy was verified by the presence of a fertilized egg or developing conceptus and a functional corpus luteum. Oviductal secretions were collected by flushing oviducts with saline and by explant culture. The oviductal fimbria, ampulla, and isthmus were individually cultured (24 h) in the presence of 3H-leucine (3H-leu) or 3H-glucosamine (3H-glcN). The presence of the M(r) 90 000-92 000 glycoprotein in oviductal flushings and culture medium was determined by fluorography and Western blotting. The M(r) 90 000-92 000 protein was present in SDS gels and blots of oviductal flushings from animals through Days 4-6 of pregnancy, but not in flushings from Day 16 pregnant animals or from ovx, untreated animals. This protein was present in 3H-leu- and 3H-glcN-labeled culture medium of the oviductal ampulla (Days 0, 1.5, 2, 3, 4, 6, and 16) and fimbria (Days 0, 1.5, 2, 3, and 4) during **early pregnancy**. The M(r) 90 000-92 000 protein was not detected in oviductal ampulla or fimbria culture medium obtained from ovx animals, nor was it present in culture medium of the isthmus oviduct obtained from estrous and pregnant animals. These data show that the E-dependent M(r) 90 000-92 000 glycoprotein is synthesized and released by the oviduct in a temporally and regionally specific manner during **early pregnancy** as the gametes and fertilized egg are traversing the tube and prior to a systemic rise in progesterone.

L78 ANSWER 32 OF 56 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.

ACCESSION NUMBER: 2003101137 EMBASE

TITLE: Effects of Gram-positive bacterial pathogens in ewes: Peptidoglycan as a potential mediator of interruption of **early pregnancy**.

AUTHOR: Stewart A.B.; Inskeep E.K.; Townsend E.C.; Dailey R.A.

CORPORATE SOURCE: R.A. Dailey, Div. of Animal/Veterinary Sciences, West Virginia University, PO Box 6108, Morgantown, WV 26506-6108, United States. rdailey@wvu.edu

SOURCE: Reproduction, (1 Feb 2003) 125/2 (295-299).  
Refs: 34  
ISSN: 1470-1626 CODEN: RCUKBS

COUNTRY: United Kingdom

DOCUMENT TYPE: Journal; General Review

FILE SEGMENT: 003 Endocrinology  
004 Microbiology  
021 Developmental Biology and Teratology

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Bacterial cell walls contain peptidoglycan (PTG), which, among other

actions, induces fever. The present experiment evaluated the effects of PTG treatment on **early pregnancy** and blood plasma concentrations of reproductive hormones. Ewes were injected i.v. with saline or 15, 30 or 60 .mu.g kg(-1) sonicated PTG (*Streptococcus pyogenes*) on day 5 after mating. Each dose of PTG induced fever. Pregnancy rate at day 25 was not related to incidence of fever but tended to differ among treatments (control, 100%; low, 100%; medium, 67%; high, 60%;  $P < 0.08$ ). Combined pregnancy rate in ewes from control and low dose groups (100%) was greater than that in ewes from medium and high dose groups (64%,  $P < 0.01$ ). Ewes with high 13, 14-dihydro-15-keto-prostaglandin F(2.alpha.) (PGFM) concentrations had lower pregnancy rates (6 of 10) than those with low concentrations of PGFM (11 of 11;  $P < 0.05$ ). Mean cortisol concentrations were higher in treated ( $2.8 \pm 0.28$  .mu.g dl(-1)) than in control ( $1.1 \pm 0.03$  .mu.g dl(-1)) ewes ( $P < 0.01$ ); the pattern of secretion was biphasic and increased in all treated ewes ( $P < 0.01$ ). Neither means nor profiles of oestradiol differed with treatment. Mean concentrations and the pattern of concentrations of progesterone were reduced in all treated ewes, as indicated by the time by treatment and linear interaction with treatment ( $1.2 \pm 0.1$  versus  $1.6 \pm 0.1$  ng ml(-1),  $P < 0.01$ ). Patterns of LH pulses did not differ from 0 to 4 h or 24 to 28 h after treatment; mean plasma LH concentration was lower in ewes treated with 0, 15 or 30 .mu.g PTG kg(-1) than with 60 .mu.g PTG kg(-1) ( $P < 0.01$ ). Pregnancy status was not related to plasma concentrations or patterns of LH, oestradiol, progesterone or cortisol. Inflammatory mediators, such as PGF(2.alpha.), may act directly on the embryo or uterus in ewes treated with PTG.

L78 ANSWER 33 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 2002:457053 BIOSIS

DOCUMENT NUMBER: PREV200200457053

TITLE: Sequential expression of **specific** genes during **early pregnancy** of somatic-cell clone-recipient cows.

AUTHOR(S): Kizaki, Keiichiro (1); Ishiwata, Hiroko (1); Hirasawa, Akira; Shiojima, Satoshi; Katsuma, Susumu; Ikawa, Hiroshi; Imai, Kei (1); Takahashi, Toru (1); Takahashi, Seiya; Akagi, Satoshi; Tsujimoto, Gozo; Hashizume, Kazuyoshi (1)

CORPORATE SOURCE: (1) Department of Developmental Biology, National Institute of Agrobiological Sciences, Tsukuba Japan

SOURCE: Biology of Reproduction, (2002) Vol. 66, No. Supplement 1, pp. 242-243. print.

Meeting Info.: 35th Annual Meeting of the Society for the Study of Reproduction Baltimore, Maryland, USA July 28-31, 2002

ISSN: 0006-3363.

DOCUMENT TYPE: Conference

LANGUAGE: English

L78 ANSWER 34 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 2002:405833 BIOSIS

DOCUMENT NUMBER: PREV200200405833

TITLE: Abnormal expression of trophoblast major histocompatibility complex class I **antigens** in cloned **bovine pregnancies** is associated with a pronounced endometrial lymphocytic response.

AUTHOR(S): Hill, Jonathan R. (1); Schlafer, Donald H.; Fisher, Patricia J.; Davies, Christopher J.

CORPORATE SOURCE: (1) Department of Clinical Sciences, College of Veterinary Medicine, Cornell University, Box 34, Ithaca, NY, 14853-6401: jrh35@cornell.edu USA

SOURCE: Biology of Reproduction, (July, 2002) Vol. 67, No. 1, pp.

55-63. print.  
ISSN: 0006-3363.

DOCUMENT TYPE: Article  
LANGUAGE: English

AB Early embryonic losses are much higher in nuclear transfer (cloned) pregnancies, and this is a major impediment to improving the efficiency of cloned animal production. In **cattle**, many of these losses occur around the time of placental attachment from the fourth week of gestation. We studied the potential for altered immunologic status of cloned pregnancies to be a contributing factor to these embryonic losses. Expression of major histocompatibility complex class I (MHC-I) by trophoblast cells and distribution of endometrial T-lymphocyte numbers were investigated. Six 5-wk-old cloned pregnancies were generated, and 2 others at 7 and 9 wk were also included, all derived from the same fetal cell line. All 8 cloned placentas displayed trophoblast MHC-I expression. None of the 8 controls (4-7 wk old) showed any MHC-I expression. The percentage of trophoblast cells expressing MHC-I varied in the clones from 17.9% to 56.5%. Numbers of T lymphocytes (CD3+ lymphocytes) were significantly higher in the endometrium of the majority of cloned pregnancies compared with controls. In the cloned pregnancies, large aggregates of T cells were frequently observed in the endometrium in addition to increased numbers of diffusely spread subepithelial lymphocytes. As trophoblast MHC-I expression is normally suppressed during early gestation, the observed MHC-I expression in the cloned pregnancies is likely to have induced a maternal lymphocytic response that would be detrimental to maintaining viability of the cloned pregnancy. These findings support a role for immunologic rejection in the syndrome of early embryonic loss in cloned **bovine** pregnancies.

L78 ANSWER 35 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 2001:426213 BIOSIS

DOCUMENT NUMBER: PREV200100426213

TITLE: Assessment of a commercially available **Early** Conception Factor (ECF) test for determining pregnancy status of dairy **cattle**.

AUTHOR(S): Cordoba, M. C.; Sartori, R.; Fricke, P. M. (1)

CORPORATE SOURCE: (1) Department of Dairy Science, University of Wisconsin, Madison, WI, 53706: fricke@calshp.cals.wisc.edu USA

SOURCE: Journal of Dairy Science, (August, 2001) Vol. 84, No. 8, pp. 1884-1889. print.  
ISSN: 0022-0302.

DOCUMENT TYPE: Article

LANGUAGE: English

SUMMARY LANGUAGE: English

AB The Early Conception Factor (ECF) test is a commercially available qualitative assay that reportedly detects a pregnancy-associated **glycoprotein** present in **bovine** serum within 48 h after conception. One concern with previous assessments of this test is that animals with viable embryos **early** during **pregnancy** that subsequently undergo embryonic loss before pregnancy diagnosis increase the rate of false-positive results and bias the assessment. To preclude this possibility, noninseminated Holstein cows (n=9) and heifers (n=8) were evaluated as an unequivocal source of nonpregnant animals, and Holstein cows (n=17) and heifers (n=1) inseminated at estrus and in which at least one embryo of transferable quality was recovered at a nonsurgical flush 6 d after artificial insemination were evaluated as an unequivocal source of pregnant animals. Blood samples were collected from all animals 6 d after estrus, which was immediately before embryo collection in pregnant animals. Each serum sample was evaluated using two ECF test cassettes (tests 1 and 2), and the result of each test cassette was interpreted by two independent readers (readers 1 and 2). Test

sensitivity, specificity, positive predictive value, negative predictive value, and accuracy were 86, 4, 49, 23, and 46%, respectively. Although the observed agreement between readers (91% for test 1; 89% for test 2) and between tests for the same serum sample (94% for reader 1; 91% for reader 2) was high, the overall rates of false-positive and false-negative ECF test results were 96 and 14%, respectively. We conclude that the ECF test is an unreliable method for determining pregnancy status of dairy **cattle** on day 6 after estrus.

L78 ANSWER 36 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1999:540023 BIOSIS

DOCUMENT NUMBER: PREV199900540023

TITLE: **Early pregnancy diagnosis** in goats by determination of pregnancy-associated **glycoprotein** concentrations in plasma samples.

AUTHOR(S): Gonzalez, F. (1); Sulon, J.; Garbayo, J. M.; Batista, M.; Cabrera, F.; Calero, P.; Gracia, A.; Beckers, J. F.

CORPORATE SOURCE: (1) Reproduction and Obstetrics, Faculty of Veterinary, University of Las Palmas de Gran Canaria, Arucas, 35416, Las Palmas Spain

SOURCE: Theriogenology, (Sept., 1999) Vol. 52, No. 4, pp. 717-725. ISSN: 0093-691X.

DOCUMENT TYPE: Article

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Different RIA systems available for measuring the concentrations of pregnancy-associated **glycoproteins** (PAGs) in dairy goats were compared in order to evaluate their accuracy in **early pregnancy** diagnosis. Plasma concentrations of PAGs were determined by 3 heterologous RIA systems with a **bovine** PAG standard and tracer in combination with antisera anti-ovine PAG (RIA 1), anti-caprine PAG55+62 (RIA 2), anti-caprine PAG55+59 (RIA 3), and by 2 homologous RIA systems that employed caprine PAG55+62 and caprine PAG55+59 and their specific antisera (RIAs 4 and 5, respectively). In all of the RIAs, the mean concentrations of PAGs were significantly higher ( $P < 0.01$ ) in pregnant than in nonpregnant goats from Day 21 onwards after breeding. On Day 21, the accuracy rates of **early pregnancy** diagnoses were 56% (RIA 1), 96% (RIA 2), 99% (RIA 3), 95% (RIA 4) and 90% (RIA 5), whereas on Day 28 these rates were >99% for RIAs 2, 3, 4 and 5. The RIAs for PAGs depend on proteins from the placenta being present in maternal plasma and require only a single sample of blood, to distinguish pregnant goats from those that fail to return to estrus for other reasons. The homologous and semi-heterologous assays are highly accurate as **early** as Day 21 of **pregnancy**.

L78 ANSWER 37 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1997:407583 BIOSIS

DOCUMENT NUMBER: PREV199799713786

TITLE: Recent developments and potentialities for reducing embryo mortality in **ruminants**: The role of IFN-tau and other cytokines in **early pregnancy**.

AUTHOR(S): Martal, J. (1); Chene, Nicole; Camous, Sylvaine; Huynh, L.; Lantier, F.; Hermier, Paloma; L'Haridon, R.; Charpigny, G.; Charlier, Madia; Chaouat, G.

CORPORATE SOURCE: (1) Unite d'Endocrinologie de l'Embryon, Station de Physiologie Animale, INRA, 78352 Jouy-en-Josas Cedex France

SOURCE: Reproduction Fertility and Development, (1997) Vol. 9, No. 3, pp. 355-380.

ISSN: 1031-3613.

DOCUMENT TYPE: General Review

LANGUAGE: English

AB This review considers the potential reduction of embryo mortality *in vitro* and *in vivo* in **ruminants**. Data on cytokines provided by different fields of reproductive immunology and biology were collated. Because of the crucial importance of the local interactions between the embryo and its dam, the expression of growth-factor and cytokine genes was analysed in the embryo proper, trophoblast, oviduct and endometrium by reverse transcriptase polymerase chain reaction in sheep and in **cattle** during the pre- and periimplantation periods. Many deleterious cytokines, such as tumour necrosis factor- $\alpha$ , interferon- $\gamma$  (IFN- $\gamma$ ), interleukin-2 (IL-2), and beneficial cytokines, such as transforming growth factor- $\beta$ , leukaemia inhibiting factor, colony-stimulating factor-1 (CSF-1), granulocyte-macrophage CSF, IL-1, IL-3, IL-4, IL-6, IL-10 and IFN- $\tau$  appeared to be involved in embryo survival in **ruminants** and other species. Their administration is efficient in a murine experimental model (CBA/J times DBA/2) of embryonic and fetal mortality. For instance, recombinant ovine IFN- $\tau$  (roIFN- $\tau$ ) injected at the moment of implantation drastically reduces embryonic mortality in this model. In **ruminants**, roIFN- $\tau$  and recombinant **bovine** IFN- $\tau$  are very efficient in maintaining progesterone luteal secretion in cyclic animals. The involvement of IFN- $\tau$  in the mechanisms of maternal pregnancy recognition are particularly detailed in relation to inhibition of 13,14-dihydro-15-keto-prostaglandin F-2 $\alpha$  (PGFM) pulses and oxytocin uterine receptivity. A synthetic model of the anti-luteolytic effects of IFN- $\tau$  on the endometrial cell is proposed. Finally, the particular potential of serum pregnancy-specific proteins (PSPs: PSPB, PSP60, pregnancy-associated **glycoprotein**) for monitoring embryo survival, with examples given for **cattle** and sheep is underlined.

L78 ANSWER 38 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1995:417573 BIOSIS

DOCUMENT NUMBER: PREV199598431873

TITLE: Isolation and partial characterization of an ovine Pregnancy-Associated **Glycoprotein** (oPAG)

AUTHOR(S): Zoli, A. P. (1); Beckers, J. F.; Ectors, F.

CORPORATE SOURCE: (1) Serv. Physiol. Pathol. Reprod., Fac. Med. Veterinaire de l'Univ. de Liege Bd de Colonster 20, P. 71 B. 41, B-4000 Liege 1. Belgium

SOURCE: Annales de Medecine Veterinaire, (1995) Vol. 139, No. 3, pp. 177-184.  
ISSN: 0003-4118.

DOCUMENT TYPE: Article

LANGUAGE: French

SUMMARY LANGUAGE: French; English

AB Isolation and partial characterization of an ovine Pregnancy-Associated **Glycoprotein** (oPAG) An ovine Pregnancy-Associated **Glycoprotein** (oPAG) has been isolated from fetal cotyledons by the means of ammonium sulfate precipitations and different liquid chromatographies. The **bovine** PAG was used as standard and tracer to monitor the oPAG in each step of isolation. Ovine PAG seems to be an heterogeneous group of **glycoproteins** of molecular mass ranging from 47 to 67 kD. Molecular cloning of its cDNA revealed that ovine and **bovine** PAG share 86% nucleotide sequence identity and both belong to the aspartic proteinase family (gtoreq 50% amino acid sequence identity to pepsin and cathepsins D and E). However neither **bovine** nor ovine PAGs do not appear to be enzymatically active. The oPAG's cDNA codes for a polypeptide of 382 amino acids long that is synthesized by trophoblastic binucleate cells since day 18 post conception and detected in maternal circulation since day 24 p.c. The detection of oPAG could be

used for **early** diagnosis of **pregnancy** and determination of **early** embryonic mortality in sheep and other domestic and wild **ruminants**.

L78 ANSWER 39 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1995:165689 BIOSIS

DOCUMENT NUMBER: PREV199598179989

TITLE: Data to the **early pregnancy diagnosis** by ultrasonography in **cattle**, pigs and horses: Short second communication.

AUTHOR(S): Szenci, Otto

CORPORATE SOURCE: Istvan u. 2, Budapest H-1078 Hungary

SOURCE: Magyar Allatorvosok Lapja, (1995) Vol. 50, No. 1, pp. 25-26.

ISSN: 0025-004X.

DOCUMENT TYPE: Article

LANGUAGE: Hungarian

SUMMARY LANGUAGE: Hungarian; English

AB Accurate and **early** detection of **pregnant** and nonpregnant animals has become a key to good breeding management because it is an essential factor for monitoring and controlling fertility in food animals and horses. One of the most recent techniques for **early pregnancy** diagnosis in **cattle**, pigs and horses on the farm is the B-mode ultrasonography. The author makes acquainted with the papers (4a-4d) published together with his coworkers and abstracts (4e-4i) presented at different congresses in English which deal with the accuracy of **early pregnancy** diagnosis in **cattle**, pigs and horses made by the first battery-operated, portable ultrasonic scanner. The scanner was made by a Hungarian invention in Canada. For detecting the pregnant/nonpregnant animals, the ultrasonic method gives a high accuracy: between the 25th to 29th day in the **cattle**, the 23rd to 24th day in pigs, after the artificial insemination, and between the 20th to 24th day in horses after the mating. In **cattle** the determination of **bovine** pregnancy associated **glycoprotein** may help in the detection of false diagnoses.

L78 ANSWER 40 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1995:431300 BIOSIS

DOCUMENT NUMBER: PREV199598445600

TITLE: Oviduct proteins in fertilization and **early** embryo development.

AUTHOR(S): Nancarrow, C. D.; Hill, J. L.

CORPORATE SOURCE: CSIRO Div. Anim. Prod., Clunies Ross St., Prospect, NSW, Locked Bag 1, Delivery Cent., Blacktown 2148 Australia

SOURCE: Journal of Reproduction and Fertility, (1995) Vol. 0, No. SUPPL. 49, pp. 3-13.

ISSN: 0022-4251.

DOCUMENT TYPE: Article

LANGUAGE: English

AB The oviduct controls the environment in which the gametes are transported and fuse, and in which embryonic development begins. The ultrastructural topography of the ampulla and isthmus is similar, consisting of ciliated and secretory cells, but a different array of proteins is secreted by each segment along with various serum components. Amino acids are selectively secreted by the oviduct; these amino acids probably interact with the gametes or embryo to facilitate the processes of fertilization and development. An oviduct-specific **glycoprotein** is synthesized by the ampulla of sheep and **cattle** in response to oestrogen and secreted mainly from day - 1 to day 3 of the ovarian cycle. This oestrus-associated **glycoprotein** (EGP) has a variable molecular mass of 80-97 kDa and a pI value ranging from 4.7 to 5.5. The



**bovine** (b) and ovine (o) EGP genes are 95.5% identical and consist of 1560 base pairs encoding 519 amino acids containing one N-linked and several O-linked glycosylation sites. The terminal glycosides are N-acetylglucosamine and galactose-N-acetylgalactosamine for bEGP, and fucose, galactose and sialic acid residues are also identified for oEGP. EGP binds to zona pellucida and blastomere membranes, but evidence for EGP binding to sperm membranes is equivocal. After in vitro fertilization the proportion of sheep oocytes cleaving was increased in the presence of oEGP, but when single-cell embryos were cultured with oEGP, these cleavage rates were reduced. In addition, consistent positive effects of oEGP were observed on blastocyst formation. Elaboration of the mechanism of synthesis of EGP, its action and its role in fertilization and embryo development is important for our understanding of the events of **early pregnancy**.

L78 ANSWER 41 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1994:381319 BIOSIS

DOCUMENT NUMBER: PREV199497394319

TITLE: An mRNA encoding an estrogen (E)-dependent oviduct-specific glycoprotein (Mr90-92,000) is expressed in a temporal and regional specific manner during **early pregnancy** in the sheep.

AUTHOR(S): Desouza, M. M.; Murray, M. K.

CORPORATE SOURCE: Tufts Univ., Boston, MA USA

SOURCE: Biology of Reproduction, (1994) Vol. 50, No. SUPPL. 1, pp. 96.

Meeting Info.: Twenty-seventh Annual Meeting of the Society for the Study of Reproduction Ann Arbor, Michigan, USA July 24-27, 1994

ISSN: 0006-3363.

DOCUMENT TYPE: Conference

LANGUAGE: English

L78 ANSWER 42 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1994:381183 BIOSIS

DOCUMENT NUMBER: PREV199497394183

TITLE: Expression of ovine sulfated **glycoprotein-1** (oSGP-1) and sulfated **glycoprotein-2** (oSGP-2) messenger RNA in ovine endometrium during the estrous cycle and **early pregnancy**.

AUTHOR(S): Graf, G. A.; Spencer, T. E.; Bazer, F. W.

CORPORATE SOURCE: Dep. Anim. Sci., Inst. Biosciences and Technol., Cent.

Anim. Biotechnol., Tex. A and M Univ., College Station, TX 77843-2471 USA

SOURCE: Biology of Reproduction, (1994) Vol. 50, No. SUPPL. 1, pp. 62.

Meeting Info.: Twenty-seventh Annual Meeting of the Society for the Study of Reproduction Ann Arbor, Michigan, USA July 24-27, 1994

ISSN: 0006-3363.

DOCUMENT TYPE: Conference

LANGUAGE: English

L78 ANSWER 43 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

ACCESSION NUMBER: 1988:437428 BIOSIS

DOCUMENT NUMBER: BA86:89526

TITLE: DIFFERENTIAL **GLYCOSYLATION** OF THE COMPONENTS OF THE **BOVINE** TROPHOBLAST PROTEIN-1 COMPLEX.

AUTHOR(S): HELMER S D; HANSEN P J; THATCHER W W

CORPORATE SOURCE: DAIRY SCI. DEP., UNIV. FLA., GAINESVILLE, FLA. 32611-0701,

U.S.A.  
SOURCE: MOL CELL ENDOCRINOL, (1988) 58 (1), 103-107.  
CODEN: MCEND6. ISSN: 0303-7207.  
FILE SEGMENT: BA; OLD  
LANGUAGE: English  
AB The **bovine** trophoblast protein-1 complex, a major secretory product of the day 17 to 18 conceptus, has been implicated in extension of luteal lifespan during **early pregnancy**. This **glycoprotein** complex, identifiable by immunoprecipitation procedures utilizing rabbit antiserum to ovine trophoblast protein-1, exists as seven isomers of two size classes (22 and 24 kDa). Culture of embryos with tunicamycin demonstrated that the isomers are N-linked **glycoproteins**, as deglycosylated products migrate as a single band (18 kDa) during electrophoresis. Culture with deoxymannojirimycin indicated that the 24 kDa form is complex in nature, whereas treatment with endoglycosidase H and lectin chromatography indicated that the 22 kDa form is a high-mannose type **glycoprotein**. These results indicate that molecular weight variants of **bovine** trophoblast protein-1 arise as a single translation product that undergoes differential post-translational glycosylation.

L78 ANSWER 44 OF 56 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1982:226742 BIOSIS  
DOCUMENT NUMBER: BA73:86726  
TITLE: EVALUATION AND MODIFICATION OF A RADIO IMMUNOASSAY FOR PREGNANCY SPECIFIC BETA-1 GLYCO PROTEIN.  
AUTHOR(S): BONTE H A; VAN DER SLUIJS VEEER G  
CORPORATE SOURCE: STREEKZIEKENHUIS MIDDEN-TWENTE, AFDELING KONINGIN JULIANA, BOERHAAVELAAN 65, NL-7555 BB HENGELLO.  
SOURCE: J CLIN CHEM CLIN BIOCHEM, (1981 (RECD 1982)) 19 (12), 1197-1200.  
CODEN: JCCBDT. ISSN: 0340-076X.  
FILE SEGMENT: BA; OLD  
LANGUAGE: English  
AB The radioimmunoassay available for pregnancy-specific .beta.1-**glycoprotein** (SP1) was tested for its ability to detect pregnancy prior to the 1st missed menstrual period. The equine serum, used as solvent for the standards, did not react like human serum. The standard solvent was replaced by **bovine** serum albumin, 50 g/l, and pooled human serum, respectively. Equilibrium and sequential incubation procedures were compared. The latter appeared to be more sensitive in the low value range and was more suitable for the **early** detection of **pregnancy**. With standards in albumin, the sequential assay was more specific. SP1 could be detected in sera of men and non-pregnant women using albumin as standard solvent. This could be due to different cross reacting material of the protein matrix or to the presence of SP1-like material in human sera. The choice of human male serum seemed most practical.

L78 ANSWER 45 OF 56 WPIDS (C) 2003 THOMSON DERWENT  
ACCESSION NUMBER: 2001-218471 [22] WPIDS  
DOC. NO. NON-CPI: N2001-155706  
DOC. NO. CPI: C2001-065291  
TITLE: Determining progesterone content of raw **milk**, useful for indicating the time of estrus and pregnancy, comprises contacting **milk** with a biosensor.  
B04 C07 D16 S03  
DERWENT CLASS: B04 C07 D16 S03  
INVENTOR(S): ROOSENSCHOON, P L; VERSTEGE, A B M  
PATENT ASSIGNEE(S): (NEDA) NEDAP NED APPARATENFAB NV  
COUNTRY COUNT: 95  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001014887	A1	20010301	(200122)	* EN	16
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ					
NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM					
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC					
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE					
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
NL 1012859	C2	20010226	(200129)		
AU 2000066013	A	20010319	(200136)		
EP 1232397	A1	20020821	(200262)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT					
RO SE SI					

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001014887	A1	WO 2000-NL580	20000821
NL 1012859	C2	NL 1999-1012859	19990819
AU 2000066013	A	AU 2000-66013	20000821
EP 1232397	A1	EP 2000-953588	20000821
		WO 2000-NL580	20000821

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000066013	A Based on	WO 200114887
EP 1232397	A1 Based on	WO 200114887

PRIORITY APPLN. INFO: NL 1999-1012859 19990819

AB WO 200114887 A UPAB: 20010421

NOVELTY - Determining the amount of progesterone (I) in raw milk of cows comprising contacting the milk with a biosensor, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a system comprising a biosensor connected to a computer for performing the new method; and

(2) use of a biosensor for determining the amount of (I) in raw milk of cows.

USE - The method and biosensor are particularly applied to cows and are used to indicate when they are in heat (for timing of insemination) or in-calf (detecting an early pregnancy), or if they have some defect in the reproductive system (claimed).

ADVANTAGE - The method provides automated, reliable and inexpensive determination of (I) content, over the whole of the concentration range 0-40 ng/ml.  
Dwg.0/3

L78 ANSWER 46 OF 56 WPIDS (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: 2002-130122 [17] WPIDS

CROSS REFERENCE: 2001-147510 [15]

DOC. NO. NON-CPI: N2002-098166

DOC. NO. CPI: C2002-039874

TITLE: New therapeutic MA polypeptides corresponding to human chorionic gonadotrophin peptides, useful for treating and preventing cancers, pathological angiogenesis and loss of body cell mass.

DERWENT CLASS: B04 D16 S03  
 INVENTOR(S): BRYANT, J; GALLO, R; LUNARDI-ISKANDAR, Y  
 PATENT ASSIGNEE(S): (UYMA-N) UNIV MARYLAND BIOTECHNOLOGY INST  
 COUNTRY COUNT: 95  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001011048	A2	20010215	(200217)*	EN	209
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ					
NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM					
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC					
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE					
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2000068947	A	20010305	(200217)		
EP 1250438	A2	20021023	(200277)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT					
RO SE SI					

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001011048	A2	WO 2000-US21499	20000805
AU 2000068947	A	AU 2000-68947	20000805
EP 1250438	A2	EP 2000-957310	20000805
		WO 2000-US21499	20000805

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2000068947	A Based on	WO 200111048
EP 1250438	A2 Based on	WO 200111048

PRIORITY APPLN. INFO: US 2000-188777P 20000313; US 1999-147825P  
 19990806

AB WO 200111048 A UPAB: 20021129  
 NOVELTY - A therapeutic polypeptide (I) selected from MA (undefined), pro MA (pMA) and other fully defined sequences as given in the specification, is new.

DETAILED DESCRIPTION - (I) selected from an isolated polypeptide:

(a) consisting of MA or pro MA (pMA);

(b) comprising fully defined sequences of peptide MA, pMA, MA(S1), MA(S2), MA(S3), MA(S5), MA(S9), MA(S10), or MA(S11) (P1-7) (synthetic mimetics of MA peptides), beta human chorionic gonadotrophin (beta hCG) 55-58, beta hCG 55-90, beta hCG 55-91, beta hCG 55-74, beta hCG 6-37, beta hCG 6-39, or beta hCG 6-40 (P8-11); or

(c) functional equivalents of (a) or (b), is new.

INDEPENDENT CLAIMS are also included for the following:

(1) a fusion polypeptide comprising (2 or more) (I) joined via a covalent bond to a heterologous polypeptide;

(2) a peptide isolated from **early pregnancy** urine comprising MA/pMA;

(3) an isolated nucleic acid (II) encoding (I);

(4) an expression vector (III) comprising (II) operably linked to a promoter;

(5) a cell (IV) comprising (III);

(6) an isolated antibody (V) or its fragment which specifically binds to (I);

(7) a cell producing (V), produced by fusion of an immortal cell line to an immunoglobulin-cell producing plasma cell producing the monoclonal antibody;

(8) an anti-idiotypic antibody which binds to a variable domain or (V);

(9) a fragment of HUSI-II (undefined) comprising an SH3 motif and flanking residues e.g., 40-46, 40-60, 40-59, 40-58, 40-66, 40-67, 40-68;

(10) expanding (M1) blood cells in vitro comprising contacting blood cells with (I);

(11) providing (M2) blood cells comprising administering the blood cells expanded by M1;

(12) detecting (M3) MA/pMA in a biological sample;

(13) purifying (M4) MA/pMA in a biological sample;

(14) producing (M5) a peptide library for screening for a therapeutic effect from anti-human immunodeficiency virus (HIV) effects, anti-cancer effects, anti-wasting effects, radioprotective effects, anti-angiogenic effects, anti-inflammatory effects and pro-hematopoietic effects; and

(15) identifying (M6) peptide having one or more of anti-HIV effect, anti-cancer effect, anti-wasting effect, radioprotective effect, and pro-hematopoietic effect.

**ACTIVITY** - Anti-HIV; cytostatic; virucide; antibacterial; antirheumatic; antiarthritic; antidiabetic; immunosuppressive; hepatotropic; neuroprotective; antiinflammatory; dermatological; antianemic; antidiarrheic; vulnerary; vasotropic; osteopathic; immunostimulant; antiparasitic; fungicide; ophthalmological. Simian immunodeficiency virus (SIV) (MAC251) induces disease in rhesus monkeys similar to acquired immunodeficiency syndrome (AIDS) in humans only with much greater rapidity. Therapy with purified MA of 3 monkeys with end-stage disease infected 13-14 mos earlier was initiated when the animals were losing weight, highly viremic (plasma virus 0.5 to 3 multiply 10 to the power of 6 copies of SIV RNA/ml by nucleic acid sequence based amplification (NASBA)), and developing pancytopenia. Treatment of these monkeys with end-stage AIDS with MA at 0.2 mg/kg dose 3 times weekly produced no significant change in SIV titer over 6 mos. observation period. However, in this period none of the 3 animals died. In contrast, most untreated animals died by this period. Also crude urinary preparations containing MA, but not crude fractions lacking MA, were inoculated subcutaneously. Using a 10 to the power of (4.5) TCID<sub>50</sub> of cell free SIV(mac251), the characteristic rise in SIV P27, reduction of CD4+T-cells, and weight loss, which occurred in the untreated animals, was prevented in MA treated animals. The untreated animals died before 6 mos. The treated animals were maintained for 7 mos without weight loss, with normal CD4+ T-cell counts, and barely detectable plasma p27 (less than 5 ng/ml in contrast to over 200 ng/ml in control animals). However, stopping therapy led to rapid onset of virus production and development of AIDS-like disease.

**MECHANISM OF ACTION** - Angiogenesis inhibitor; gene therapy.

**USE** - (I) is useful for inhibiting HIV replication. (I) is useful for treating or preventing:

(a) human immunodeficiency virus (HIV) infection;

(b) cancer such as brain, breast, lung, pancreatic, prostate or renal cancer, or hematopoietic malignancy, preferably Kaposi's sarcoma where (I) is administered:

(i) in conjunction with radiation therapy; or

(ii) prior to, contemporaneously with or after anticancer chemotherapy, or radiation therapy;

(c) a condition characterized by loss of body cell mass in a subject, such as wasting associated with HIV infection, cancer, or hematopoietic deficiency;

(d) a condition associated with pathological angiogenesis, e.g., angiogenesis associated with neoplasm; or

(e) hematopoietic deficiency:

(i) resulting from failure or dysfunction of normal blood cell production and/or maturation; or

(ii) associated with neoplastic disease of a hematopoietic origin, malignancy, malignant disease of hematopoietic organ, autoimmune condition, trauma, radiation exposure (associated with medical therapy or anticancer therapy, where the polypeptide is administered prior to, after or contemporaneously with the radiation).

(I) is also useful in ex vivo gene therapy which involves removing cells from the subject, treating the cells with a pro-hematopoietic polypeptide to provide an expanded and/or differentiated set of cells, where the pro-hematopoietic polypeptide is (I), transforming cells and/or expanded and/or differentiated cells with a therapeutic expression vector to provide transformed cells, and returning transformed cells to the subject. The method further involves increasing the blood count of at least one class of blood cells in the subject by administering to the subject (I). The therapeutic vector used in the above mentioned method expresses a polypeptide which is dysfunctional or lacking in the subject, or a polypeptide which produces a therapeutic effect in the subject. The cells which are removed from the subject are preferably hematopoietic cells (all claimed). (I) is also useful for treating bacterial infections, chronic diarrhea, anemia, autoimmune disease, rheumatoid arthritis, diabetes, chronic hepatitis, systemic lupus erythematosus, wound, burn, inflammation (especially of the cornea), osteoporosis, parasitic infections and fungal infections.

Dwg.0/17

L78 ANSWER 47 OF 56 WPIDS (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: 2000-587225 [55] WPIDS

DOC. NO. NON-CPI: N2000-434606

DOC. NO. CPI: C2000-175057

TITLE: Composition for testing bovine

**pregnancy**, comprises antibody to an **early pregnancy** factor conjugated to a **label**.

DERWENT CLASS: B04 C07 D16 P32

INVENTOR(S): FRUSHOUR, S L M; JONES, K D; PEARSON, M; SLOWIKOWSKI, E

PATENT ASSIGNEE(S): (KEMS-N) KEMS BIO-TEST LTD

COUNTRY COUNT: 89

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2000051520	A2	20000908	(200055)	* EN	46
RW:	AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL				
	OA PT SD SE SL SZ TZ UG ZW				
W:	AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES				
	FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS				
	LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL				
	TJ TM TR TT TZ UA UG UZ VN YU ZA ZW				
AU 2000035119	A	20000921	(200065)		

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000051520	A2	WO 2000-US5616	20000302
AU 2000035119	A	AU 2000-35119	20000302

#### FILING DETAILS:

PATENT NO	KIND	PATENT NO

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 AU 2000035119 A Based on WO 200051520

PRIORITY APPLN. INFO: US 1999-122400P 19990302

AB WO 200051520 A UPAB: 20001102

NOVELTY - A composition (I) for testing pregnancy of an animal, comprises an antibody to an **early pregnancy** factor (EPF) of an animal conjugated to a label.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a test device (II) for detecting an animal EPF, comprising:

(a) a porous solid phase material capable of conveying a liquid sample in a fluid flow direction generally parallel to the length of the test device;

(b) sample receiving zone within the porous solid phase material, where the sample and other assay reagents may be contacted with the device; and

(c) an antibody zone within the porous solid phase material, comprising an immobilized antibody to the EPF of the animal disposed at a downstream location from the sample receiving zone;

(2) isolating (III) an antibody to an EPF, comprising injecting a biological fluid comprising EPF of the animal to another animal which is capable of producing antibody to the biological fluid, isolating antibodies and removing non-early EPF antibodies;

(3) a liquid sampling tube, comprising a base portion having an inlet for allowing a liquid sample to enter into the tube, a body portion having at least one opening and a top portion for enclosing the tube; and

(4) a **bovine** pregnancy testing kit (IV), comprising a **bovine** pregnancy test device and a liquid sampling tube.

USE - (I) or (II) is useful for determining pregnancy of an animal, especially a **cow** which is pregnant for less than 100 days, especially from 20-40 days, by obtaining a liquid biological sample such as urine, saliva, milk, perspiration (or their combinations), preferably serum and testing for the presence of EPF in the sample (claimed).

ADVANTAGE - The **pregnancy** detection method facilitates

**early** detection of the **pregnancy** as **early** as 30-48 hours after insemination.

Dwg. 0/6

L78 ANSWER 48 OF 56 WPIDS (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: 1989-292498 [40] WPIDS

DOC. NO. NON-CPI: N1989-223124

DOC. NO. CPI: C1989-129639

TITLE: New mammalian **serum** protein indicative of **pregnancy** - allowing **early** diagnosis, esp. in **ruminants**, and identification of embryo death.

DERWENT CLASS: A89 B04 C03 J04 S03 S05

INVENTOR(S): CAMOUS, S; MARTAL, J

PATENT ASSIGNEE(S): (INRG) INRA INST NAT RECH AGRONOMIQUE

COUNTRY COUNT: 17

PATENT INFORMATION:

PATENT NO	KIND DATE	WEEK	LA	PG
WO 8908668	A 19890921 (198940)*	FR	27	
RW: AT BE CH DE FR GB IT LU NL SE				
W: AU DK JP US				
FR 2628743	A 19890922 (198945)			
PT 90043	A 19891110 (198950)			
AU 8932959	A 19891005 (199001)			

EP 406281 A 19910109 (199102)  
 R: AT BE CH DE FR GB IT LI LU NL SE  
 DK 9002232 A 19900918 (199103)  
 ES 2017811 A 19910301 (199115)  
 JP 03504236 W 19910919 (199144)  
 EP 406281 B1 19920722 (199230) FR 16  
 R: AT BE CH DE FR GB IT LI LU NL SE  
 DE 68902233 E 19920827 (199236)

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 8908668	A	WO 1989-FR115	19890317
FR 2628743	A	FR 1988-3590	19880318
EP 406281	A	EP 1989-903756	19890317
ES 2017811	A	ES 1989-978	19890317
JP 03504236	W	JP 1989-503451	19890317
EP 406281	B1	EP 1989-903756	19890317
DE 68902233	E	WO 1989-FR115	19890317
		DE 1989-602233	19890317
		EP 1989-903756	19890317
		WO 1989-FR115	19890317

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 406281	B1 Based on	WO 8908668
DE 68902233	E Based on	EP 406281
	Based on	WO 8908668

PRIORITY APPLN. INFO: FR 1988-3590 19880318

AB WO 8908668 A UPAB: 19930923

New protein, designate PSP (pregnancy serum protein) 60 and specific for pregnancy in mammals, has an N-terminal sequence of formula X-Gly-Ser-X-Leu-Thr-Thr-His -Pro-Leu-Arg-Asn-Ile -Lys-Asp-Leu-Val -Tyr-Met-Gly-X-Ile-Thr-Ile-Gly -Thr-Pro-Pro-Gln -Glu-Phe-Gln-Val-Val-Phe-Asp-Thr-Ala-Ser-X-(X is probably Asn). PSP60 has mol wt about 60.000 (polyacrylamide electrophoresis under denaturing conditions) and isoelectric point about 5.5.

USE - Detection of PSP60 in the blood (esp of ruminants) provides early detection of pregnancy, while a decrease in its concn is indicative of death of the embryo. It is detected by immunoassay with specific mono- or polyclonal antibodies.  
 0/6

L78 ANSWER 49 OF 56 WPIDS (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: 1986-264940 [40] WPIDS

DOC. NO. NON-CPI: N1986-198048

DOC. NO. CPI: C1986-114696

TITLE: Cells producing early pregnancy factor - used for producing monoclonal antibodies and detecting pregnancy.

DERWENT CLASS: B04 C03 D16 S03

INVENTOR(S): CAVANAGH, A C; ROLFE, B E

PATENT ASSIGNEE(S): (MORT-I) MORTON H; (UYQU) UNIV QUEENSLAND

COUNTRY COUNT: 14

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
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 WO 8605498 A 19860925 (198640)\* EN 20  
 RW: AT BE CH DE FR GB IT LU NL SE  
 W: AU GB JP US  
 AU 8655897 A 19861013 (198651)  
 JP 62502304 W 19870910 (198742)  
 GB 2192634 A 19880120 (198803)  
 EP 262119 A 19880406 (198814) EN  
 R: AT BE CH DE FR IT LI NL SE  
 GB 2192634 B 19900321 (199012)

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 8605498	A	WO 1986-AU60	19860312
JP 62502304	W	JP 1986-501847	19860312
GB 2192634	A	GB 1986-20636	19860312
EP 262119	A	EP 1986-901744	19860312

PRIORITY APPLN. INFO: AU 1985-2402 19850912; AU 1985-9664  
 19850312; AU 1985-9750 19850315; AU  
 1986-55897 19850320

AB WO 8605498 A UPAB: 19930922  
 Method for producing **early pregnancy** factor (EPF) from any mammalian cell source comprises growing a selected cell which produces EPF in a culture medium to produce a supernatant medium contg. EPF and other prods. and harvesting the supernatant medium to obtain the EPF. The cells may be choriocarcinoma cells, human myeloma cells or human lymphoblastic cells. The purified EPF may be used to produce monoclonal antibodies.

USE - The antibodies can be used to detect EPF in human serum or urine for pregnancy diagnosis, e.g. in a home pregnancy testing kit or for detecting pregnancy in the horse and **cattle** industries and in the preservation of endangered species.  
 O/O

L78 ANSWER 50 OF 56 WPIDS (C) 2003 THOMSON DERWENT  
 ACCESSION NUMBER: 1986-042108 [06] WPIDS  
 DOC. NO. NON-CPI: N1986-030808  
 DOC. NO. CPI: C1986-017913  
 TITLE: **New isolated bovine pregnancy antigen and monoclonal antibody to it - useful in detection and supervision of bovine pregnancy at early stage.**  
 DERWENT CLASS: B04 C03 D16 S03  
 INVENTOR(S): BOSTWICK, E; HUNTER, A  
 PATENT ASSIGNEE(S): (MINU) MINNESOTA UNIVERSITY  
 COUNTRY COUNT: 11  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 8600623	A	19860130 (198606)*	EN	31	
RW: AT CH DE FR GB IT NL SE					
W: BR					
EP 188551	A	19860730 (198631)	EN		
R: AT CH DE FR GB IT LI NL SE					
BR 8506817	A	19861125 (198702)			
US 4755460	A	19880705 (198829)			

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 8600623	A	WO 1985-US1288	19850708
EP 188551	A	EP 1985-903612	19850708
US 4755460	A	US 1984-628571	19840706

PRIORITY APPLN. INFO: US 1984-628571 19840706

AB WO 8600623 A UPAB: 19930922

(1) Isolated pure **bovine** pregnancy antigen for detecting and determining pregnancy in **cattle** consists of a glycoprotein (I) obtd from a pregnant **bovine** animal is new.

(I) binds adenine dinucleotide; it has immunoreactive portions of molecular wt. 158000-263000; it contains N-acetylglucosamine, galactose and L-fucose and D-mannose and/or D-glucose; it has an isoelectric point of 4.5-5.5; and it gives a blue stain with Coomassie blue.

(I) produces an antibody to which **bovine** luteinising hormone, haemoglobin, albumin, IgG, fibrinogen fetuin and alpha-fetoprotein are not cross-reactive. (2) Monoclonal antibody produced by a hybridoma formed by fusing cells from a mouse myeloma line and spleen cells from a mouse previously immunised with (I), and with which the antibody reacts, is new. The hybridoma is esp. ATCC HB 8846.

USE/ADVANTAGE - The antigen and/or antibody are used for the detection and supervision of **bovine pregnancy** at an **early** stage. Blood, urine, milk or tissue extract from the **bovine** is tested for the antigen by contact with antiserum to it.  
0/2

L78 ANSWER 51 OF 56 WPIDS (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: 1986-252581 [39] WPIDS

DOC. NO. NON-CPI: N1986-188800

DOC. NO. CPI: C1986-108895

TITLE: **Early pregnancy test for farm animals** - pref. **cattle**, pigs and sheep using heterologous antiserum against **early pregnancy serum**, absorbed with non-pregnant serum.

DERWENT CLASS: B04 C03 S03

INVENTOR(S): KLIMA, F; PITRE, C; TIEMANN, U

PATENT ASSIGNEE(S): (DEAK) AKAD WISSENSCHAFTEN DDR

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DD 236177	A	19860528	(198639)*		3

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DD 236177	A	DD 1985-275075	19850411

PRIORITY APPLN. INFO: DD 1985-275075 19850411

AB DD 236177 A UPAB: 19930922

In an **early pregnancy** test for agricultural animals,  
(a) a heterologous antiserum against **early pregnancy**

serum of the species to be tested is prepared, and (b) the antiserum is absorbed with non-pregnant serum of the same species and subsequently used in a crossed immunoelectrophoresis or other serological in vitro detection method.

- Systematic **early** detection of **pregnancy** in farm animals (especially **cattle**, pigs and sheep), for monitoring of fertility and early recognition of sterility problems. Simple, rapid and cheap test giving sure diagnosis of pregnancy even in the pre-implantive phase.

O/O

L78 ANSWER 52 OF 56 WPIDS (C) 2003 THOMSON DERWENT  
 ACCESSION NUMBER: 1984-242835 [39] WPIDS  
 DOC. NO. NON-CPI: N1984-181744  
 DOC. NO. CPI: C1984-102640  
 TITLE: **Early** diagnosis of **pregnancy** in **cattle** - involves using known gravo-hormone prepn. obtd. from **serum** of pregnant mares.  
 B04 C03 P31  
 DERWENT CLASS: BOGDANOV, M P  
 INVENTOR(S):  
 PATENT ASSIGNEE(S): (SHAT-I) SHATALOV P I  
 COUNTRY COUNT: 1  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
SU 1072856	A	19840215	(198439)*		3

#### APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
SU 1072856	A	SU 1975-2141946	19750609

PRIORITY APPLN. INFO: SU 1975-2141946 19750609

AB SU 1072856 A UPAB: 19930925

The **cattle** are injected subcutaneously with 2000-3000 units (mouse) units (800-1200 international units) on the 16th or 32nd day after insemination. 60-80 days after insemination rectal examination shows no hormonal stimulation in pregnant **cattle**. Non-pregnant **cattle** show positive stimulation.

USE/ADVANTAGE - More efficient **early** diagnosis of **pregnancy** esp. in longhorned **cattle**.

Typically, injections with Gravohomone prepareate do not cause abortion and give high effectivity of **early** diagnosis of **pregnancy**. Bul.5/7.2.84.

O/O

L78 ANSWER 53 OF 56 WPIDS (C) 2003 THOMSON DERWENT  
 ACCESSION NUMBER: 1980-51100C [29] WPIDS  
 TITLE: Monitoring pregnancy in dairy animals - by determining oestrogen conjugates in **milk**.  
 B04 C03 P14 S03 X25  
 DERWENT CLASS: (HEAP-I) HEAP R B; (NATR) NAT RES DEV CORP  
 PATENT ASSIGNEE(S):  
 COUNTRY COUNT: 5  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
NL 7909362	A	19800701	(198029)*		

GB 2040043 A 19800820 (198034)  
 FR 2445107 A 19800829 (198042)  
 US 4294922 A 19811013 (198144)  
 CA 1131112 A 19820907 (198243)  
 GB 2040043 B 19830316 (198311)

PRIORITY APPLN. INFO: GB 1978-50234 19781229; GB 1979-43682  
 19791219

AB NL 7909362 A UPAB: 19930902

Method of monitoring pregnancy in milk-producing livestock (esp. dairy **cattle**) comprises determining the concn. of estrogen conjugates (I) in a sample of (or derived from) the milk of the animal, and comparing the result with the av. concn. of (I) in milk from non-pregnant animals of the same species.

The test is based on the fact that the concn. of (I) in milk from pregnant animals is significantly higher than in milk from non-pregnant animals. It can be performed on a routine basis and provides an **early** indication of **pregnancy** (within 15-20 days of insemination); it also provides a measure of the health of the foetus in the later stages of pregnancy.

L78 ANSWER 54 OF 56 WPIDS (C) 2003 THOMSON DERWENT

ACCESSION NUMBER: 1976-42331X [23] WPIDS

TITLE: Anti-embryo **serum** prod by immunizing hosts with embryonic matl - useful for diagnosis of pregnancy in mammals.

DERWENT CLASS: B04 C03 P31 S03 S05

PATENT ASSIGNEE(S): (AUST) AUSTRALIA DEPT AGRICULTUR; (VICT-N) STATE OF VICTORIA; (UYME) UNIV MELBOURNE

COUNTRY COUNT: 6

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DE 2551431	A	19760526	(197623)*		
FR 2291497	A	19760716	(197638)		
JP 51091323	A	19760810	(197639)		
BR 7507642	A	19760831	(197644)		
ZA 7507032	A	19760916	(197648)		
GB 1492689	A	19771123	(197747)		

PRIORITY APPLN. INFO: AU 1974-9644 19741118; AU 1975-2695  
 19750808

AB DE. 2551431 A UPAB: 19930901

New anti-embryo serum is produced by immunizing  $\geq 1$  animals with a homogenate of embryo or selected embryo parts, embryo extract, purified embryo fractions or the blood of pregnant animals, unimportant antibodies being removed by selective adsorption of tissue homogenates other than embryos, uteri, ovaries and teh blood of pregnant animals. Procedure for the diagnosis of pregnancy in animals involves the use of antiserum thus produced in the testing of mammalian blood using methods which permit the detection of antigens, pref. agglutination agglutination inhibition, precipitation and/or radioimmunological methods. Used in **early** detection of **pregnancy** in animals such as sheep, **cattle** horses, pigs, dogs and goats as well as in humans. Unlike pregnancy tests involving the measurement of HCG, the new method is highly specific and does not give false positive results in the presence of such non-pregnancy

conditions as hydatiform moles, choriadenoma or choriocarcinoma.

L78 ANSWER 55 OF 56 WPIDS (C) 2003 THOMSON DERWENT  
 ACCESSION NUMBER: 1967-07565H [00] WPIDS  
 TITLE: **Early** detection of **pregnancy** in  
 domestic animals.  
 DERWENT CLASS: C00  
 PATENT ASSIGNEE(S): (SYNT) SYNTEX CORP  
 COUNTRY COUNT: 1  
 PATENT INFORMATION:

PATENT NO	KIND DATE	WEEK	LA	PG
DE 1492157	B	(196800)*		

PRIORITY APPLN. INFO: DE 1962-S302187 19621005

AB DE 1492157 B UPAB: 19930831  
 Compn. for **early** detection of **pregnancy** in domestic  
 animals,  
 contng. androgens and estrogens in an amount adapted to the  
 animal species.  
**Early** detection of **pregnancy** in such  
 non-menstruating  
 domestic animals as horses, **cattle** and pigs in which pregnancy  
 is  
 otherwise difficult to detect in the early stages.

L78 ANSWER 56 OF 56 WPIDS (C) 2003 THOMSON DERWENT  
 ACCESSION NUMBER: 1966-39723F [00] WPIDS  
 TITLE: **Early** detection of **pregnancy** in  
 domestic animals.  
 DERWENT CLASS: B00  
 PATENT ASSIGNEE(S): (SYNT) SYNTEX CORP  
 COUNTRY COUNT: 1  
 PATENT INFORMATION:

PATENT NO	KIND DATE	WEEK	LA	PG
DE 1492157	A	(196800)*		

PRIORITY APPLN. INFO: DE 1962-S302187 19621005

AB DE 1492157 B UPAB: 19930831  
 Compn. for **early** detection of **pregnancy** in domestic  
 animals,  
 contng. androgens and estrogens in an amount adapted to the  
 animal species.  
**Early** detection of **pregnancy** in such  
 non-menstruating  
 domestic animals as horses, **cattle** and pigs in which pregnancy  
 is  
 otherwise difficult to detect in the early stages.  
 The pref. route of administration is by i.m. injection.  
 Between the 12th and 17th days after mating (optimally on the  
 15th or 16th day), the female animal is injected with an androgen  
 - estrogen mixture in an experimentally determined  
 species-specific dosage. The timing of the injection is less  
 critical if long-acting steroid esters are used. If the animal

is not pregnant, powerful manifestations of estrus appear between the 20th and 24th day. If estrus does not appear, this is taken as an indication that the animal is pregnant. This diagnostic method has no effect on the fertility of the ova of non-pregnant animals and no effect on embryonic development in pregnant animals.

=> file home

FILE 'HOME' ENTERED AT 18:24:54 ON 02 APR 2003



Claim 66; Page 110-111; 136pp; English.

This sequence represents bovine pregnancy associated glycoprotein (bPAG) bopAgv. PAGs are structurally related to peptides, thought to be restricted to ungulate mammals and are specifically expressed in the chorion or trophoblasts of the placenta. PAGs (see AY12035-58) are highly diverse in sequence, with regions of high variability largely confined to surface-exposed loops. Selected PAGs (e.g. bopAgv) that are products of invasive binucleate cells, expressed highly in early pregnancy at the time of trophoblast invasion, and expressed weakly, if at all, in late pregnancy, are useful in the early diagnosis of pregnancy. Immunassays for detecting such PAGs are disclosed. Identification of PAGs allows detection of pregnancy in cattle, goat, sheep, rhinoceros, horse, cat, dog and human (all claimed).

Sequence 379 AA:

Query Match 100.0%; Score 2081; DB 20; Length 379;  
Best Local Similarity 100.0%; Pred. No. 9, Je-200;  
Matches 379; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 MKWVILGVAFSECVIKVLPQVTKMTLSGKNMLKFNHPIYLSQISFGSNU71 60  
DB 1 MKWVILGVAFSECVIKVLPQVTKMTLSGKNMLKFNHPIYLSQISFGSNU71 60  
OY 61 HPLRNLMLVGNVITGTPQFQVFTDGSGLAPVFCSTMPACSNVFWPQLQS7F 120  
DB 61 HPLRNLMLVGNVITGTPQFQVFTDGSGLAPVFCSTMPACSNVFWPQLQS7F 120  
OY 121 OPTNKTFTTIGSGSGKGLAVDVRIGDVSTDPQFGLSVYGLGNVGVGLNAP 180  
DB 121 OPTNKTFTTIGSGSGKGLAVDVRIGDVSTDPQFGLSVYGLGNVGVGLNAP 180  
OY 181 NISFSGAIPFONLAKGASBPVPFATYLSKNKGDSVYMGVGDHYTKGELNAPLE 240  
DB 181 NISFSGAIPFONLAKGASBPVPFATYLSKNKGDSVYMGVGDHYTKGELNAPLE 240  
OY 241 AGRWYVMDHISMKRTYATCSGCEALVTGTSIDPGLVNNHILIRPFPDSKHYV 300  
DB 241 AGRWYVMDHISMKRTYATCSGCEALVTGTSIDPGLVNNHILIRPFPDSKHYV 300  
OY 301 SCFATKLPSTFTTNGIKYPMATATYFMSGKCYSAKNTVPSRETWLGDALP 360  
DB 301 SCFATKLPSTFTTNGIKYPMATATYFMSGKCYSAKNTVPSRETWLGDALP 360  
OY 361 HFSVFDGNDIGLAAV 379  
DB 361 HFSVFDGNDIGLAAV 379

RESULT 2

AY12042  
AC AY12042 standard; Protein: 379 AA.

XX AY12042;  
XX 05-JAN-2000 (first entry)

XX Bos taurus.

XX Bovine pregnancy associated glycoprotein bopAgv.

XX PAG; bopAgv; pregnancy associated glycoprotein; cattle; bovine;  
XX early pregnancy diagnosis.

XX 19-MAR-1999; 99MO-US6038.

XX 23-SEP-1999.

XX 19-MAR-1999; 99MO-US6038.

XX 20-MAR-1999; 98US-007873.

XX 20-MAR-1999; 98US-007873.

XX 20-MAR-1999; 98US-007873.

XX 20-MAR-1999; 98US-007873.

XX 20-MAR-1999; 98US-007873.

28-OCT-1998; 98US-010618.

(UNOR ) UNIV MISSOURI.

XX Roberts RM, Green JA, Xie S;

XX WPI; 1999-601132/51.

XX N-FSD; AA120169.

XX New bovine polypeptides useful for early diagnosis of pregnancy

XX Claim 70; Page 122-123; 136pp; English.

This sequence represents bovine pregnancy associated glycoprotein (bPAG) bopAgv. PAGs are structurally related to peptides, thought to be restricted to ungulate mammals and are specifically expressed in the chorion or trophoblasts of the placenta. PAGs (see AY12035-58) are highly diverse in sequence, with regions of high variability largely confined to surface-exposed loops. Selected PAGs (e.g. bopAgv) that are products of invasive binucleate cells, expressed highly in early pregnancy at the time of trophoblast invasion, and expressed weakly, if at all, in late pregnancy, are useful in the early diagnosis of pregnancy. Immunassays for detecting such PAGs are disclosed. Identification of PAGs allows detection of pregnancy in cattle, goat, sheep, rhinoceros, horse, cat, dog and human (all claimed).

Sequence 379 AA:

Query Match 98.8%; Score 1983; DB 20; Length 379;  
Best Local Similarity 98.8%; Pred. No. 9, Je-200;  
Matches 374; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

OY 1 MKWVILGVAFSECVIKVLPQVTKMTLSGKNMLKFNHPIYLSQISFGSNU71 60  
DB 1 MKWVILGVAFSECVIKVLPQVTKMTLSGKNMLKFNHPIYLSQISFGSNU71 60  
OY 61 HPLRNLMLVGNVITGTPQFQVFTDGSGLAPVFCSTMPACSNVFWPQLQS7F 120  
DB 61 HPLRNLMLVGNVITGTPQFQVFTDGSGLAPVFCSTMPACSNVFWPQLQS7F 120  
OY 121 OPTNKTFTTIGSGSGKGLAVDVRIGDVSTDPQFGLSVYGLGNVGVGLNAP 180  
DB 121 OPTNKTFTTIGSGSGKGLAVDVRIGDVSTDPQFGLSVYGLGNVGVGLNAP 180  
OY 181 NISFSGAIPFONLAKGASBPVPFATYLSKNKGDSVYMGVGDHYTKGELNAPLE 240  
DB 181 NISFSGAIPFONLAKGASBPVPFATYLSKNKGDSVYMGVGDHYTKGELNAPLE 240  
OY 241 AGRWYVMDHISMKRTYATCSGCEALVTGTSIDPGLVNNHILIRPFPDSKHYV 300  
DB 241 AGRWYVMDHISMKRTYATCSGCEALVTGTSIDPGLVNNHILIRPFPDSKHYV 300  
OY 301 SCFATKLPSTFTTNGIKYPMATATYFMSGKCYSAKNTVPSRETWLGDALP 360  
DB 301 SCFATKLPSTFTTNGIKYPMATATYFMSGKCYSAKNTVPSRETWLGDALP 360  
OY 361 HFSVFDGNDIGLAAV 379  
DB 361 HFSVFDGNDIGLAAV 379

RESULT 3

AY12043

ID AY12044 standard; Protein: 380 AA.

XX AY12044;  
XX 05-JAN-2000 (first entry)

XX Bovine pregnancy associated glycoprotein bopAgv.

XX PAG; bopAgv; pregnancy associated glycoprotein; cattle; bovine;  
XX early pregnancy diagnosis.

XX 19-MAR-1999; 99MO-US6038.

XX 23-SEP-1999.

XX 19-MAR-1999; 99MO-US6038.

XX 20-MAR-1999; 98US-007873.

XX 20-MAR-1999; 98US-007873.



OS Bos taurus.  
 XX PN W0947934-A2.  
 XX XX 23-SEP-1999.  
 XX PF 19-MAR-1999; 99MU-US06038.  
 XX PA 20-MAR-1998; 98US-0078783.  
 XX PR 28-OCT-1998; 98US-0106188.  
 XX XX (UMOR ) UNIV MISSOURI.  
 XX PI Roberts BM, Green JA, Xie S;  
 XX WPI: 1999-601132/51.  
 XX N-PSDB: AA220171.  
 XX PT New bovine polypeptides useful for early diagnosis of pregnancy -  
 XX Claim 74, page 126-127; 136pp; English.  
 CC This sequence represents bovine pregnancy associated glycoprotein (PAG) bopAGs. PAGs are structurally related to peptides, thought to be produced in the chorion or trophoblast of the placenta. PAGs (see AA32035-58) are highly diverse in sequence, with regions of hypervariability largely confined to surface-exposed loops. Selected PAGs (respectively the claimed bopAGs given in AA32035-49) that are produced in the early stages of gestation, are useful in the early diagnosis of pregnancy. Immunoassays for detecting such pregnancy in cattle, goat, sheep, rhinoceros, horse, cat, dog and human (all claimed).  
 XX XX Sequence 380 AA:  
 XX 5Q  
 Query Match 78 74; Score 1571.5; DB 20; Length 380;  
 Best Local Similarity 78 74; Pred. No. 9.5e-156;  
 Matches 297; Conservative 31; Mismatches 51; Indels 1; Gaps 1;  
 QY 1 MKWILGLVAFSECTVXIPQVQVWVTKRTISGRKMNKFKELHPYLSQISFGSNLTI 60  
 DB 1 MKWILGLVAFSECTVXIPQVQVWVTKRTISGRKMNKFKELHPYLSQISFGSNLTI 60  
 QY 61 IRLNLMVLYVNTIGTTPQVQVWVTKRTISGRKMNKFKELHPYLSQISFGSNLTI 119  
 DB 61 IRLNLMVLYVNTIGTTPQVQVWVTKRTISGRKMNKFKELHPYLSQISFGSNLTI 119  
 QY 120 POPYNTITITGSGCKMFLATQVTRIGLVSTQDQVFLSVGLKGRNTQVGLNLT 179  
 DB 120 POPYNTITITGSGCKMFLATQVTRIGLVSTQDQVFLSVGLKGRNTQVGLNLT 179  
 QY 181 PNLSCSGAIPFQKANGAIEDTFAFTLSKRGSSVWGGVQRYTKGLNMLPL 240  
 DB 181 PNLSCSGAIPFQKANGAIEDTFAFTLSKRGSSVWGGVQRYTKGLNMLPL 240  
 QY 240 EAGENVMQIRISMKRTVACSGDCAVFTGTSHIGDGLRVNHLITFPFSKHY 299  
 DB 240 EAGENVMQIRISMKRTVACSGDCAVFTGTSHIGDGLRVNHLITFPFSKHY 299  
 QY 300 RAGQVIVVQVTRITGKATVACSGDCAVFTGTSHIGDGLRVNHLITFPFSKHY 359  
 DB 300 RAGQVIVVQVTRITGKATVACSGDCAVFTGTSHIGDGLRVNHLITFPFSKHY 359  
 QY 360 RYKSVFVGRNGRIGLAV 379  
 DB 360 RYKSVFVGRNGRIGLAV 379  
 QY 361 RYKSVFVGRNGRIGLAV 380  
 DB 361 RYKSVFVGRNGRIGLAV 380  
 RESULT 40  
 AA32035  
 ID AAY2050 standard; Protein: 380 AA.  
 XX

AC AN32050;  
 XX 05-JAN-2000 (first entry)  
 XX XX Bovine pregnancy associated glycoprotein bopAG.  
 XX KW PAG; bopAG; pregnancy associated glycoprotein; cattle; bovine;  
 XX early pregnancy diagnosis.  
 XX OS Bos taurus.  
 XX XX W0947934-A2.  
 XX PN 23-SEP-1999.  
 XX XX 19-MAR-1999; 99MU-US06038.  
 XX PF 20-MAR-1998; 98US-0078783.  
 XX PR 28-OCT-1998; 98US-0106188.  
 XX XX (UMOR ) UNIV MISSOURI.  
 XX PI Roberts BM, Green JA, Xie S;  
 XX WPI: 1999-601132/51.  
 XX N-PSDB: AA220131.  
 XX PT New bovine polypeptides useful for early diagnosis of pregnancy -  
 XX Disclosure: Page 99-100; 136pp; English.  
 CC This sequence represents bovine pregnancy associated glycoprotein (PAG) bopAGs. PAGs are structurally related to peptides, thought to be produced in the chorion or trophoblast of the placenta. PAGs (see AA32035-58) are highly diverse in sequence, with regions of hypervariability largely confined to surface-exposed loops. Selected PAGs (respectively the claimed bopAGs given in AA32035-49) that are produced in the early stages of gestation, are useful in the early diagnosis of pregnancy. Immunoassays for detecting such pregnancy in cattle, goat, sheep, rhinoceros, horse, cat, dog and human (all claimed).  
 XX XX Sequence 380 AA:  
 XX 5Q  
 Query Match 77 74; Score 1559.5; DB 20; Length 380;  
 Best Local Similarity 78 74; Pred. No. 9.5e-155;  
 Matches 297; Conservative 28; Mismatches 54; Indels 1; Gaps 1;  
 QY 1 MKWILGLVAFSECTVXIPQVQVWVTKRTISGRKMNKFKELHPYLSQISFGSNLTI 60  
 DB 1 MKWILGLVAFSECTVXIPQVQVWVTKRTISGRKMNKFKELHPYLSQISFGSNLTI 60  
 QY 61 IRLNLMVLYVNTIGTTPQVQVWVTKRTISGRKMNKFKELHPYLSQISFGSNLTI 119  
 DB 61 IRLNLMVLYVNTIGTTPQVQVWVTKRTISGRKMNKFKELHPYLSQISFGSNLTI 119  
 QY 120 POPYNTITITGSGCKMFLATQVTRIGLVSTQDQVFLSVGLKGRNTQVGLNLT 179  
 DB 120 POPYNTITITGSGCKMFLATQVTRIGLVSTQDQVFLSVGLKGRNTQVGLNLT 179  
 QY 181 PNLSCSGAIPFQKANGAIEDTFAFTLSKRGSSVWGGVQRYTKGLNMLPL 240  
 DB 181 PNLSCSGAIPFQKANGAIEDTFAFTLSKRGSSVWGGVQRYTKGLNMLPL 240  
 QY 240 EAGENVMQIRISMKRTVACSGDCAVFTGTSHIGDGLRVNHLITFPFSKHY 299  
 DB 240 EAGENVMQIRISMKRTVACSGDCAVFTGTSHIGDGLRVNHLITFPFSKHY 299  
 QY 300 RAGQVIVVQVTRITGKATVACSGDCAVFTGTSHIGDGLRVNHLITFPFSKHY 359  
 DB 300 RAGQVIVVQVTRITGKATVACSGDCAVFTGTSHIGDGLRVNHLITFPFSKHY 359  
 QY 360 RYKSVFVGRNGRIGLAV 379  
 DB 360 RYKSVFVGRNGRIGLAV 379  
 QY 361 RYKSVFVGRNGRIGLAV 380  
 DB 361 RYKSVFVGRNGRIGLAV 380



61	RPLPNTKLVYVNGTITGTPPGQVFWPTDGSGLWLP-ICTMPCASAPWFPOLOSTF	111
Dub	.....	
62	RIPIETIMHOMIVNGITITGGPKFQVFPVDTGSSDLVPFGSCACATKWTFILHISST	120
Dub	.....	
120	FQRTNFTTTITSGESMKCFIAOTVAVIGLVSVDQPGCLSVSEYGLSGRNYOCTGLGY	179
Oy	.....	
121	PHFOAKFNKYTKSRMGKLJAYDVTYRIGLVSVDQPGCLSAKWPQDFCIPDVOLGNY	180
Dub	.....	
180	PNISSGATPTIFNLKNOALSEPVAFTYLNNKHODSYGVFGVGHQYIKELANKPLI	239
Oy	.....	
240	PNESVSGAIPITFNKNEALSEPVAFTYSKKIRHGVSVMVGQVHHRYKELANNVPLI	240
Dub	.....	
241	OAGQGVTVDRIRSMKRKIACSGCALVPTGTALI KPRVLVNNTQKLTITGPGRSKY	300
Dub	.....	
300	VSCATKYLPSITPTINGIKTYPMARNTFDSORCVGANESYVTSRSHMLGDGF	359
Oy	.....	
301	RVCSYVFLPSIPTINGINYPVARATLKSGESCITYKTMYTSRSHMLGDGF	360
Dub	.....	
Oy	.....	
360	BVCSTVFSDNDNRICLARAV 379	
Dub	.....	
361	RLYTSVFSDNDNRICLARAV 380	
Dub	.....	
RESULT 7		
AA132048		
ID	AA132048 standard; Protein; 380 AA.	
NC	AA132048:	
XX	05-JAN-2000 (first entry)	
DT	Bovine pregnancy associated glycoprotein boPA20.	
DD	PAG: boPA20; pregnancy associated glycoprotein; cattle; bovine;	
KM	early pregnancy diagnosis.	
MM	boS taurus.	
OS	MO9947934-A2.	
XX	21-SEP-1999.	
PD	19-MAR-1999: 99MO-US000308..	
PF	20-MAR-1998: 98US-0078783.	
PP	28-OCT-1998: 98US-0106188..	
XX	(UNCR ) UNIV MISSOURI.	
XX	Roberts RM, Green JA, Xie S;	
XX	NFT. 1999-001132/51.	
XX	NFSUB. 1999-00120175.	
XX	New bovine polypeptides useful for early diagnosis of pregnancy -	
XX	Claim 82, Page 133-135; 136pg: English.	
XX	This sequence represents bovine pregnancy associated glycoprotein	
CC	(PAG) boPA20. PAGs are structurally related to peptides, thought	
CC	to have evolved from a common ancestor. The amino acid residues	
CC	in the chorion or trophoblastum of the placenta. PAGs (see	
CC	AA132035-58) are highly diverse in sequence, with regions of	
CC	hypervariability largely confined to surface-exposed loops.	
CC	The hypervariable regions are located in the early stages of	
CC	gestation, are useful in the early diagnosis of pregnancy.	
CC	Immunosays for detecting such PAGs are disclosed. Identification	
CC	of PAGs allows detection of pregnancy in cattle, goat, sheep,	
CC	ruminants, horse, cat, dog and human (all claimed)..	
Sequence	380 AA:	
SQ	.....	



PR 20-MAR-1998; 9805-0078783  
 XX 28-OCT-1998; 9805-0106188.  
 XX (MORC) UNIV MISSOURI.  
 XX Roberts RM, Green JA, Xie S;  
 PI WPI: 1999-601132/51.  
 XX WPI: 1999-601132/51.  
 DR N-PSDB: AA220176.  
 XX New bovine polypeptides useful for early diagnosis of pregnancy -  
 XX Claim 84: Page 135-136; 136pp: English.  
 PS This sequence represents bovine pregnancy associated glycoprotein  
 XX (PAG) bopAg21. PAGs are structurally associated with the placenta  
 CC and are restricted to ungulate mammals, and are specifically expressed  
 CC in the chorion or trophoblast of the placenta. PAGs (see  
 CC US2003/058) are highly diverse in the placenta with a degree of  
 CC hypervariability largely confined to surface-exposed loops.  
 CC Selected PAGs (e.g. bopAg21) that are produced in the early stages  
 CC of gestation, are useful in the early diagnosis of pregnancy. cation  
 CC of PAGs allows detection of pregnancy in cattle, goat, sheep,  
 CC rhinoceros, horse, cat, dog and human (all claimed).  
 XX Sequence 380 AA:  
 Query Match 75.3%; Score 1511.5; DB 20: Length 380;  
 Meet Locs Similarity 76.64; Pred. No. 4e-150; 58; Indels 1; Gaps 1;  
 Matches 291; Conservative 30; Mismatches 58; Indels 1; Gaps 1;  
 QY 1 MKWLVGLVAFSECVIKPLQVWTKTSGRMKLNKLEKHPVLSQISFGNSLTI 60  
 DB 1 MKWLVGLVAFSECVIKPLQVWTKTSGRMKLNKLEKHPVLSQISFGNSLTI 60  
 QY 61 HPRLNMLVYNTGITITGPOEPVFDTGSSDLVPS-FTCMPCASPVWFRQLQST 119  
 DB 61 LPLNLEADLVNGLTITGTPQEVVFDTGSSDLYVSDCTSPCLTIVWFRQLQST 120  
 QY 120 FQTNHTITFTSGSSKMGFLATVTRIGDVLSTQDQPLVYVEGLGRNTDQVGLN 179  
 DB 121 FEPNTFTFTSGSSKMGFLATVTRIGDVLSTQDQPLVYVEGLGRNTDQVGLN 180  
 QY 180 PNI SFSGALVIFDNKANGALSEPVYATFLTKNKGSSVWFGVDQITKGLNAPLI 239  
 DB 181 PDESFSEALPIFDKLNKALSEPVYATFLTKNKGSSVWFGVDQITKGLNAPLI 240  
 QY 240 PAGWYVWDRISNRYVACSDGCLAVPTGTSGLRQVGLVYVGHVYRTKGLNAPLI 299  
 DB 241 EGDWYVWDRISNRYVACSDGCLAVPTGTSGLRQVGLVYVGHVYRTKGLNAPLI 300  
 QY 300 YGCTAKYVGLRFTINGIKYMPARVYFPGSGRCHSKYKEMVTSRETNLQDAFL 359  
 DB 301 VYCSANALFSLFTINGIKYMPARVYFPGSGRCHSKYKEMVTSRETNLQDAFL 360  
 QY 360 RYVTSVDRNGRIGLAQV 379  
 DB 361 RYVTSVDRNGRIGLAQV 380  
 RESULT 11  
 ID AAAY2047 standard; Protein: 380 AA.  
 XX AAAY2047;  
 XX AAAY2047;  
 XX 05-JAN-2000 (first entry)  
 XX Bovine pregnancy associated glycoprotein bopAg19.  
 XX PAG: bopAg19; pregnancy associated glycoprotein; cattle; bovine;  
 XX early pregnancy diagnosis.

XX BOS taurus.  
 XX W05947934-A2.  
 PD 23-SEP-1999.  
 XX 19-MAR-1999; 99MC-006038.  
 PR 20-MAR-1998; 9805-0078783.  
 PR 28-OCT-1998; 9805-0106188.  
 PA (MORC) UNIV MISSOURI.  
 XX Roberts RM, Green JA, Xie S;  
 PI WPI: 1999-601132/51.  
 DR N-PSDB: AA220174.  
 XX New bovine polypeptides useful for early diagnosis of pregnancy -  
 XX Claim 80: Page 131-133; 136pp: English.  
 PS This sequence represents bovine pregnancy associated glycoprotein  
 CC (PAG) bopAg19. PAGs are structurally related to pepains, thought to  
 CC be restricted to ungulate mammals, and are specifically expressed  
 CC in the chorion or trophoblast of the placenta. PAGs (see  
 CC US2003/058) are highly diverse in the placenta with a degree of  
 CC hypervariability largely confined to surface-exposed loops.  
 CC Selected PAGs (e.g. bopAg19) that are produced in the early stages  
 CC of gestation, are useful in the early diagnosis of pregnancy. cation  
 CC of PAGs allows detection of pregnancy in cattle, goat, sheep,  
 CC rhinoceros, horse, cat, dog and human (all claimed).  
 XX Sequence 380 AA:  
 Query Match 75.3%; Score 1508.5; DB 20: Length 380;  
 Meet Locs Similarity 76.64; Pred. No. 4e-150; 58; Indels 1; Gaps 1;  
 Matches 288; Conservative 33; Mismatches 58; Indels 1; Gaps 1;  
 QY 1 MKWLVGLVAFSECVIKPLQVWTKTSGRMKLNKLEKHPVLSQISFGNSLTI 60  
 DB 1 MKWLVGLVAFSECVIKPLQVWTKTSGRMKLNKLEKHPVLSQISFGNSLTI 60  
 QY 61 HPRLNMLVYNTGITITGPOEPVFDTGSSDLVPS-FTCMPCASPVWFRQLQST 119  
 DB 61 HPRLNMLVYNTGITITGPOEPVFDTGSSDLVPS-FTCMPCASPVWFRQLQST 120  
 QY 120 FQTNHTITFTSGSSKMGFLATVTRIGDVLSTQDQPLVYVEGLGRNTDQVGLN 179  
 DB 121 FQTNHTITFTSGSSKMGFLATVTRIGDVLSTQDQPLVYVEGLGRNTDQVGLN 180  
 QY 180 PNI SFSGALVIFDNKANGALSEPVYATFLTKNKGSSVWFGVDQITKGLNAPLI 239  
 DB 181 PNI SFSGALVIFDNKANGALSEPVYATFLTKNKGSSVWFGVDQITKGLNAPLI 240  
 QY 240 PAGWYVWDRISNRYVACSDGCLAVPTGTSGLRQVGLVYVGHVYRTKGLNAPLI 299  
 DB 241 PAGWYVWDRISNRYVACSDGCLAVPTGTSGLRQVGLVYVGHVYRTKGLNAPLI 300  
 QY 300 YGCTAKYVGLRFTINGIKYMPARVYFPGSGRCHSKYKEMVTSRETNLQDAFL 359  
 DB 301 YGCTAKYVGLRFTINGIKYMPARVYFPGSGRCHSKYKEMVTSRETNLQDAFL 360  
 QY 360 RYVTSVDRNGRIGLAQV 379  
 DB 361 RYVTSVDRNGRIGLAQV 380  
 RESULT 12  
 ID AAAY2041 standard; Protein: 380 AA.

AA72041:  
 05-JAN-2000 (first entry)  
 Bovine pregnancy associated glycoprotein boPAG7v.  
 PAG: boPAG7v; pregnancy associated glycoprotein; cattle; bovine;  
 early pregnancy diagnosis.  
 Bos taurus.  
 W09947934-A2.  
 23-SEP-1999.  
 19-MAR-1999; 99MO-US06038.  
 20-MAR-1998; 98US-0078783.  
 28-OCT-1994; 98US-0106188.  
 (UMOR) UNIV MISSOURI.  
 Roberts RM, Green JA, Xie S;  
 WPI: 1999-601132/51.  
 N-FSDB; AAZ20168.  
 New bovine polypeptides useful for early diagnosis of pregnancy -  
 Claim 68; Page 120-122; 136pp; English.  
 This sequence represents bovine pregnancy associated glycoprotein  
 (PAG) boPAG7v. PAGs are structurally related to pepsins, thought to  
 be involved in the digestion of proteins in the placenta. PAGs expressed  
 in the chorion or trophoblast of the placenta. PAGs (see  
 AA72035-58) are highly diverse in sequence, with regions of  
 hypervariability largely confined to surface-exposed loops of  
 the molecule. The regions of hypervariability are located in the  
 regions of the molecule that are exposed to the surface of the  
 gestation, are useful in the early diagnosis of pregnancy.  
 Immunassays for detecting such PAGs are disclosed. Identification  
 of PAGs allows detection of pregnancy in cattle, goat, sheep,  
 chamois, roe deer, and human (all claimed).  
 Sequence 380 AA;  
 Query Match  
 Best Local Similarity 75.0%; Pred. No. 1:7e-149;  
 Matches 28; Conservative 57; Mismatches 57; Indels 1; Gaps 1;  
 1: MWTVLGLVAFSECTVPIKRVKMTKSLKMLNKLKEDYPLQISFGNSMTI 60  
 Db 1 MWTVLGLVAFSECTVPIKRVKMTKSLKMLNKLKEDYPLQISFGNSMTI 60  
 61 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 119  
 Db 61 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 119  
 120 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 120  
 Db 120 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 120  
 121 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 121  
 Db 121 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 121  
 180 PHSFGASLTFDNLKQALSEPVATLSKMQBSEVYMGVQVDTKGLNLELI 239  
 Db 180 PHSFGASLTFDNLKQALSEPVATLSKMQBSEVYMGVQVDTKGLNLELI 239  
 241 WLSGKAPVIFDNLKQALSEPVATLSKMQBSEVYMGVQVDTKGLNLELI 240  
 Db 241 WLSGKAPVIFDNLKQALSEPVATLSKMQBSEVYMGVQVDTKGLNLELI 240  
 242 QANVSWWVRIIWKHREYVATLSKMQBSEVYMGVQVDTKGLNLELI 299  
 Db 242 QANVSWWVRIIWKHREYVATLSKMQBSEVYMGVQVDTKGLNLELI 299  
 300 VSCFATKLPSTETINCKYIPMAEATFKSGRCYSKAFKENVYFRETWLDGAF 359  
 Db 300 VSCFATKLPSTETINCKYIPMAEATFKSGRCYSKAFKENVYFRETWLDGAF 359  
 301 VCSANVLPSTETINCKYIPMAEATFKSGRCYSKAFKENVYFRETWLDGAF 360  
 Db 301 VCSANVLPSTETINCKYIPMAEATFKSGRCYSKAFKENVYFRETWLDGAF 360

QY 360 RYFVSFVDFGNDRIGLARAV 379  
 Db 361 ALTFVSFVDFGNDRIGLARAV 380  
 RESULT 13  
 ID: AA72038 standard; Protein: 379 AA.  
 XX AA72038:  
 XX 05-JAN-2000 (first entry)  
 XX Bovine pregnancy associated glycoprotein boPAG6.  
 XX PAG: boPAG6; pregnancy associated glycoprotein; cattle; bovine;  
 XX early pregnancy diagnosis.  
 XX Bos taurus.  
 XX W09947934-A2.  
 XX 23-SEP-1999.  
 XX 19-MAR-1999; 99MO-US06038.  
 XX 20-MAR-1998; 98US-0078783.  
 XX 28-OCT-1998; 98US-0106188.  
 XX (UMOR) UNIV MISSOURI.  
 XX Roberts RM, Green JA, Xie S;  
 XX WPI: 1999-601132/51.  
 XX N-FSDB; AAZ20165.  
 XX New bovine polypeptides useful for early diagnosis of pregnancy -  
 XX Claim 62; Page 106-107; 136pp; English.  
 XX This sequence represents bovine pregnancy associated glycoprotein  
 XX (PAG) boPAG6. PAGs are structurally related to pepsins, thought to  
 XX be involved in the digestion of proteins in the placenta. PAGs (see  
 XX AA72035-58) are highly diverse in sequence, with regions of  
 XX hypervariability largely confined to surface-exposed loops of  
 XX the molecule. The regions of hypervariability are located in the  
 XX regions of the molecule that are exposed to the surface of the  
 XX gestation, are useful in the early diagnosis of pregnancy.  
 XX Immunassays for detecting such PAGs are disclosed. Identification  
 XX of PAGs allows detection of pregnancy in cattle, goat, sheep,  
 XX chamois, roe deer, and human (all claimed).  
 XX Sequence 379 AA;  
 Query Match  
 Best Local Similarity 74.7%; Pred. No. 3.1e-147;  
 Matches 284; Conservative 34; Mismatches 60; Indels 2; Gaps 2;  
 1: MWTVLGLVAFSECTVPIKRVKMTKSLKMLNKLKEDYPLQISFGNSMTI 60  
 Db 1 MWTVLGLVAFSECTVPIKRVKMTKSLKMLNKLKEDYPLQISFGNSMTI 60  
 61 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 119  
 Db 61 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 119  
 120 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 119  
 Db 120 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 119  
 121 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 121  
 Db 121 HPRLHTWLVYGNITIGTPPOEYVDFGSSDLWVSE-CTWPKASAPWFKQOST 121  
 180 PHSFGASLTFDNLKQALSEPVATLSKMQBSEVYMGVQVDTKGLNLELI 239  
 Db 180 PHSFGASLTFDNLKQALSEPVATLSKMQBSEVYMGVQVDTKGLNLELI 239  
 241 WLSGKAPVIFDNLKQALSEPVATLSKMQBSEVYMGVQVDTKGLNLELI 240  
 Db 241 WLSGKAPVIFDNLKQALSEPVATLSKMQBSEVYMGVQVDTKGLNLELI 240  
 242 QANVSWWVRIIWKHREYVATLSKMQBSEVYMGVQVDTKGLNLELI 299  
 Db 242 QANVSWWVRIIWKHREYVATLSKMQBSEVYMGVQVDTKGLNLELI 299  
 300 VSCFATKLPSTETINCKYIPMAEATFKSGRCYSKAFKENVYFRETWLDGAF 359  
 Db 300 VSCFATKLPSTETINCKYIPMAEATFKSGRCYSKAFKENVYFRETWLDGAF 359  
 301 VCSANVLPSTETINCKYIPMAEATFKSGRCYSKAFKENVYFRETWLDGAF 360  
 Db 301 VCSANVLPSTETINCKYIPMAEATFKSGRCYSKAFKENVYFRETWLDGAF 360



CC of PACS allows detection of pregnancy in cattle, goat, sheep,  
 XX rhinoceros, horse, cat, dog and human (all claimed).

5Q Sequence 380 AA:  
 Query Watch 69.1k; Score 1388.5; DB 20; Length 380;  
 Best Local Similarity 71.1k; Pred. No. 3.5e-137;  
 Matches 270; Conservative 36; Mismatches 73; Indels 1; Gaps 1;  
 Oy 1 MKVIVLLGVAFSDCYIKPLQVQKTKTKLSCKNMLNFKLKHYPFLSQISFRGSNUI 60  
 DB 1 MKVIVLLGVAFSDCYIKPLQVQKTKTKLSCKNMLNFKLKHYPFLSQISFRGSNUI 60  
 Oy 61 HPLNINMLVYGNITIGTPQGEVQVDTGSSDLAVPS-FCMPACSNAPVPRQASST 119  
 DB 61 HPLNINMLVYGNITIGTPQGEVQVDTGSSDLAVPS-FCMPACSNAPVPRQASST 119  
 Oy 120 FQPKNTFTTIGSGMKPLAVTVRIQDVLSTQDQPLSVVYGLKRNKTCVGLNRY 179  
 DB 120 FQPKNTFTTIGSGMKPLAVTVRIQDVLSTQDQPLSVVYGLKRNKTCVGLNRY 179  
 Oy 180 PNISFSGAIFIDNLKMOALSERVAFPLSKNMQBSVYMGQDHYKGLNTPLI 239  
 DB 180 PNISFSGAIFIDNLKMOALSERVAFPLSKNMQBSVYMGQDHYKGLNTPLI 239  
 Oy 240 EAGEKRVIMORISNKRVTIACSDCEALVHGTSHLEGQRLVNNIHLIRTPFTSKHY 299  
 DB 240 EAGEKRVIMORISNKRVTIACSDCEALVHGTSHLEGQRLVNNIHLIRTPFTSKHY 299  
 Oy 300 VSCFAKPLSFITFINGIKYPMARAYIFKDSRCYSKFNKENTVTSRETMIGDPL 359  
 DB 300 VSCFAKPLSFITFINGIKYPMARAYIFKDSRCYSKFNKENTVTSRETMIGDPL 359  
 Oy 360 RRYESVFDQRDRIGLARV 379  
 DB 360 RRYESVFDQRDRIGLARV 379  
 Oy 361 RLFTSVFDQRDRIGLATKY 380  
 DB 361 RLFTSVFDQRDRIGLATKY 380

Search completed: April 2, 2003, 17:44:39  
 Job time : 77 secs







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RESULT 5
146617
Query Match      52.4%  Score 1053;  DB 2;  Length 387;
Best Local Similarity 54.0%  Pred. No. 3; 8e-80;
Matches 120;  Conservative 57;  Mismatches 108;  Indels 14;  Gaps 7;
QY  1  MKRVLLGVAFSECTVYKIPQVTKMTKLSKGNKMLNFKLEHPY-----LSQISFPG 55
DB  1  MKKVLGLVAFSECTVYKIPQVTKMTKLSKGNKMLNFKLEHPY-----LSQISFPG 60
C-Date: 21-Feb-1997  Sequence_revision 21-Feb-1997  *text_change 22-Jun-1999
C-Accession: 146517  Species: Sus scrofa domestica (domestic pig)
A:Accession: 146517  Species: Sus scrofa domestica (domestic pig)
Biolt. Repr. 53; 21-28; 1995  Associated glycoproteins; new members of the aspartic prot
A:Title: Porcine pregnancy-associated glycoproteins: new members of the aspartic protein
A:Reference number: 146616; MIMD:9539486; PMID:7669851
A:Status: preliminary; translated from GB/DNML/DBJ
A:Molecule type: DNA
A:Residues: 1-387 <S>A
A:Cross-references: GB:I43461; MIMD:9508683; PIDN:AA881331.1; PID:g1066345
C:Genetics:
A:Gene: PAG2
C:Superfamily: pepsin
Query Match      52.4%  Score 1053;  DB 2;  Length 387;
Best Local Similarity 54.0%  Pred. No. 3; 8e-80;
Matches 120;  Conservative 57;  Mismatches 108;  Indels 14;  Gaps 7;
QY  1  MKRVLLGVAFSECTVYKIPQVTKMTKLSKGNKMLNFKLEHPY-----LSQISFPG 55
DB  1  MKKVLGLVAFSECTVYKIPQVTKMTKLSKGNKMLNFKLEHPY-----LSQISFPG 60
QY  56  SNLITPLERLNMLVYGNITGTPPOQVFWFVDSGLDWPV-FCMPACSAVWFRQ 114
DB  1  OKFSQVPLRNLNMLVYGNISITGTPPOQVFWFVDSGLDWPV-FCMPACSAVWFRQ 120
QY  115  LOSSTFQPTNKTITFGSSGKMGFLATVRIQGLVDVSDQFGLSVYEG-LEGENDY 172
DB  121  SNISITHDKASIKLAYSGKSGFLQVDTVRIQGLVDVSDQFGLSKETOKAFHED 180
QY  173  GVGLGYNPISFGATPFDNLKNGQALSEVPATFLSKNGKSGVWVGQVDRYKGE 232
DB  181  GTLGALPSTATGTTVDNLKNGQALSEVPATFLSKNGKSGVWVGQVDRYKGE 240
QY  233  LKMPITLDEGWRMDIRSKRTVYACSDCEALVHTGTSHEBGRVLNHLIKFR 292
DB  241  LKMPITLDEGWRMDIRSKRTVYACSDCEALVHTGTSHEBGRVLNHLIKFR 292
QY  293  PDSKNSYCATKLPISFTINGIKYPMATVIFPD-SNGRYSATKE-VKWTSR 349
DB  299  REFEKVEYVFNKMAALVDFTINVDVFPVPAQVIRKNNKRTCTFEDHDTL-NOR 357
QY  350  EMTLQGLVFLFYVDQNRIGLAAQ 378
DB  358  EMTLQGLVFLFYVDQNRIGLAAQ 386
RESULT 6
A83902 (EO 3.4.23.-) P. pascuorum - rabbit
C-Accession: A83902  Species: Oryctolagus cuniculus (domestic rabbit)
C-Date: 14-Jun-1991  Sequence_revision 20-Sep-1991  *text_change 08-Nov-1996
A:Accession: A83902  Species: Oryctolagus cuniculus (domestic rabbit)
Biolt. Repr. 53; 21-28; 1990  Associated glycoproteins; new members of the aspartic prot
A:Title: Structure and development of rabbit pepsinogens. Stage-specific zymogens, nucle
A:Reference number: A83902; MIMD:91009127; PMID:2129556
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-389 <K>G
A:Cross-references: GB:J05640
C:Genetics:
C:Keywords: aspartic proteinase; hydrolase; protein digestion
Query Match      47.5%  Score 953;  DB 2;  Length 389;

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Best Local Similarity 49.9%  Pred. No. 7; 6e-72;
Matches 134;  Conservative 67;  Mismatches 124;  Indels 10;  Gaps 6;
QY  1  MKRVLLGVAFSECTVYKIPQVTKMTKLSKGNKMLNFKLEHPY-----LSQISFPG --- 57
DB  1  MKKVLGLVAFSECTVYKIPQVTKMTKLSKGNKMLNFKLEHPY-----LSQISFPG 60
QY  58  UTIPERLNMLVYGNITGTPPOQVFWFVDSGLDWPV-FCMPACSAVWFRQ 116
DB  61  UTIPERLNMLVYGNITGTPPOQVFWFVDSGLDWPV-FCMPACSAVWFRQ 120
QY  117  SSTFQPTNKTITFGSSGKMGFLATVRIQGLVDVSDQFGLSVYEG-LEGENDY 174
DB  121  SSTFQPTNKTITFGSSGKMGFLATVRIQGLVDVSDQFGLSVYEG-LEGENDY 180
QY  175  LGLNPNISFGATPFDNLKNGQALSEVPATFLSKNGKSGVWVGQVDRYKGE 232
DB  181  LGLNPNISFGATPFDNLKNGQALSEVPATFLSKNGKSGVWVGQVDRYKGE 240
QY  234  SNLITPLERLNMLVYGNITGTPPOQVFWFVDSGLDWPV-FCMPACSAVWFRQ 293
DB  241  SNLITPLERLNMLVYGNITGTPPOQVFWFVDSGLDWPV-FCMPACSAVWFRQ 300
QY  294  PDSKNSYCATKLPISFTINGIKYPMATVIFPD-SNGRYSATKE-VKWTSR -E 350
DB  301  PDSKNSYCATKLPISFTINGIKYPMATVIFPD-SNGRYSATKE-VKWTSR -E 360
QY  351  EMTLQGLVFLFYVDQNRIGLAAQ 379
DB  361  EMTLQGLVFLFYVDQNRIGLAAQ 389
RESULT 7
146616
pregnancy-associated glycoprotein - pig
C-Accession: 146616  Species: Sus scrofa domestica (domestic pig)
C-Date: 21-Feb-1997  Sequence_revision 21-Feb-1997  *text_change 22-Jun-1999
A:Accession: 146616  Species: Sus scrofa domestica (domestic pig)
Biolt. Repr. 53; 21-28; 1995  Associated glycoproteins; new members of the aspartic prot
A:Reference number: 146616; MIMD:9539486; PMID:7669851
A:Status: preliminary; translated from GB/DNML/DBJ
A:Residues: 1-389 <S>A
A:Cross-references: GB:I43460; MIMD:9508682; PIDN:AA881530.1; PID:g1066344
C:Genetics:
C:Superfamily: pepsin
Query Match      46.7%  Score 938;  DB 2;  Length 389;
Best Local Similarity 48.8%  Pred. No. 3; 8e-79;
Matches 130;  Conservative 67;  Mismatches 122;  Indels 10;  Gaps 6;
QY  1  MKRVLLGVAFSECTVYKIPQVTKMTKLSKGNKMLNFKLEHPY-----LSQISFPG --- 56
DB  1  MKKVLGLVAFSECTVYKIPQVTKMTKLSKGNKMLNFKLEHPY-----LSQISFPG 60
QY  57  NTIPERLNMLVYGNITGTPPOQVFWFVDSGLDWPV-FCMPACSAVWFRQ 114
DB  61  PRISGLRNLNMLVYGNITGTPPOQVFWFVDSGLDWPV-FCMPACSAVWFRQ 120
QY  115  LOSSTFQPTNKTITFGSSGKMGFLATVRIQGLVDVSDQFGLSVYEG-LEGENDY 172
DB  121  TUSSTQSSNRTYKLPAGHSVGLLTQVRIQGLVDVSDQFGLSVYEG-LEGENDY 180
QY  173  GVGLGYNPISFGATPFDNLKNGQALSEVPATFLSKNGKSGVWVGQVDRYKGE 232
DB  181  UTIPERLNMLVYGNITGTPPOQVFWFVDSGLDWPV-FCMPACSAVWFRQ 240
QY  233  LKMPITLDEGWRMDIRSKRTVYACSDCEALVHTGTSHEBGRVLNHLIKFR 292
DB  241  LKMPITLDEGWRMDIRSKRTVYACSDCEALVHTGTSHEBGRVLNHLIKFR 292

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Db 241 LKRYPLASRYWTLIRTWGTVVWCTGRCQALLDGSATFLGSQLSIQIQR 300  
 Qy 293 PFGSKHYVSPATKSLSTFIITNGIKYMTANAYIPKSR-GRYSANKEWTFSR-E 350  
 Db 301 FTEHFWECARITLADFTITINNOVVDVAYLWGSFPRCYINFSQGTSGIKKE 360  
 Qy 351 TWLGDALRRYSVFGNDRIGLAAV 379  
 Db 361 TWLGDPTFLRYFTVFRGNGICLLAAV 389  
 RESULT 8  
 SI9684  
 pepsin A (BC 3.4.23.1) 2/3 precursor - Japanese macaque  
 N:Alternate names: Pepsinogen A isozyme 2/3  
 C:Date: 32-Nov-1993  
 C:Accession: SI9684; SI6064  
 R:Kagayama, T.; Tanabe, K.; Koike, O.  
 A:Title: Development-dependent expression of isozymes of monkey pepsinogens and structure of the pro-peptide of monkey pepsinogen A.  
 A:Reference number: SI9684; MUID:92037645; PMID:1235977  
 A:Accession: SI9684  
 A:Residues: 1-388 <CDS>  
 A:Cross-references: ENBL:X39755; PDB:1A4247.1; PID:g38069  
 A:Note: Parts of sequence, including amino ends of pepsinogen and activation intermediate, have not been determined. If this sequence represents isoform 2 or 3, which is in by 4 months of age.  
 C:Comment: Although two-step activation is observed, activation is predominantly a one-step activation.  
 C:Superfamily: pepsin  
 F1-15/Domain: signal peptidase, gastric juice, hydrolase; phosphoprotein; protein digester  
 F16-388/Product: pepsinogen A 2/3 status experimental <CDS>  
 F16-62/Domain: activation peptide status experimental <CDS>  
 F16-388/Product: pepsinogen A 2/3 status experimental <CDS>  
 F40-41/Cleavage site: Asp-Phe (pepsin) status experimental  
 F52-62/Cleavage site: Leu-Ile (pepsin) status experimental  
 F54-277/Active site: Asp status predicted  
 F54-277/Active site: Asp status predicted  
 F130/Binding site: Phosphate (Ser) (covalent) status predicted  
 Query Match 46.0%; Score 924.5; D0 1; Length 388;  
 Best Local Similarity 46.0%; Pred. No. 2-26-59;  
 Matches 189; Conservative: 69; Mismatches 117; Indels 11; Gaps 7;  
 Qy 1 MWKVLGVAFSECV-KTFLRQVTKMTLSGNKLAKMHPRLKSLQSPGSR-- 57  
 Db 1 MWKLLGLVALSECTHLYFLKPKVSRNLSNGLKLTSLKLVNPKVSPQAPAP 60  
 Qy 58 -LTIHLPLINMLVYGHITGTTPPEQVVDGSSDVAES-FCIMPACAPWFRQ 114  
 Db 61 TLIDGPTLRLTWMEYTGCTGTAAQDTVITDGLSSNVAIVSSLSACTINWFRP 120  
 Qy 115 LQSTPQPNMTITIGSSKGLFANTVRIGDVLDTQDPLGSLVETG--LEGRND 172  
 Db 121 QDSSTVQTSFSTVTSITGSLGVLDTQVGGSLSTDTPLTGLSTHDPGSLFYAPD 180  
 Qy 173 GVLGATVTFSGALIFPNKLQKGLSEVPVATFLSKRGVSGVFGVDQVYKGE 232  
 Db 181 GILATLPLSSSSCATVPMHWGLVSGVLSVLDAGDSGVITVIGTIGDSYTSYS 240  
 Qy 233 LNTPLDAGDWIMDRINSRVAKCSDDCALVHTGFTSGDEGRVNIHRL-RT 291  
 Db 241 LAMPVPSYEGVYKSLSTYNGEN-ARQSCDQ-ITDGLTGLTSPFSSS 300  
 Qy 292 RPDQSHVYSFATYITSTIFINGIPMTARATIDRSRGCVENKENTYAT-SRE 350  
 Db 301 ENSGQVYSALSSLPVITVINGIPVTPVITIAQ-SGGSTIGGQMDVFESSE 359  
 Qy 351 TWLGDALRRYSVFGNDRIGLCA 376  
 Db 360 LALIDQVITRQVTVFDRANNSVLA 395

## RESULT 9

pepsin A (BC 3.4.23.1) 3 precursor (validated) - human  
 N:Alternate names: Pepsinogen A isozyme 3  
 C:Species: Homo sapiens (man)  
 C:Date: 19-Feb-1984  
 C:Accession: M00790; M00790.1; M00790.2; M00790.3  
 R:Sogawa, K.; Fujii-Kuriyama, Y.; Mizukami, Y.; Ichihara, Y.; Takahashi, K.  
 J. Biol. Chem. 258: 5306-5311, 1983  
 A:Title: Primary structure of human pepsinogen gene.  
 A:Accession: M00980  
 A:Residues: 400980; MUID:9316159; PMID:6300126  
 A:Molecule type: DNA  
 A:Residues: 1-388 <CDS>  
 R:Kagayama, T.; Tanabe, K.; Koike, O.  
 R:Kagayama, T.; Tanabe, K.; Koike, O.  
 R:Kagayama, T.; Tanabe, K.; Koike, O.  
 A:Title: A comparative study on the NH2-terminal amino acid sequences and some other  
 A:Reference number: SI9683; MUID:9050108; PMID:2159353  
 A:Accession: PM0053  
 A:Molecule type: protein  
 A:Molecule type: protein  
 A:Residues: 16-68 <POL>  
 R:Ichihara, Y.; Sogawa, K.; Takahashi, K.  
 A:Title: Isolation of human, swine, and rat preproinsulins and calf preprochymosin. A  
 A:Reference number: A2434; MUID:86059312; PMID:2415509  
 A:Accession: F22434  
 A:Residues: 1-15, 'XX', '19-20, 'X', '22, 'XX', '25-26, 'X', '28 <ICH>  
 R:Bres, M.P.J.; Zelle, B.; Pieper, D.S.; Wager, W.H.; Planta, R.J.; Erikson, A.W.; Hummel, T.; 182-187, 1987  
 A:Reference number: 154252; MUID:88006181; PMID:3119885  
 A:Accession: 154252  
 A:Status: translated from GB/EMBL/DBJ  
 A:Residues: 1-27, 'F', '29-73 <RES>  
 A:Cross-references: GB:M27598; PID:g19834; PID:AAA3431.1; PID:g198336  
 C:Genetic code: 6633  
 A:Cross-references: GDB:119482; OMIM:169710  
 A:Map position: 11q13.1-11q13.5  
 A:Introns: 15/2; 73/3; 113/1; 152/3; 219/2; 258/2; 306/3; 339/3  
 C:Keywords: aspartic proteinase; gastric juice; hydrolase; phosphoprotein; protein digester  
 F1-15/Domain: signal peptidase status experimental <CDS>  
 F16-388/Product: pepsinogen A 3 status experimental <CDS>  
 F16-388/Product: pepsin A 3 minor variant status experimental <CDS>  
 F60-188/Product: pepsin A 3 status experimental <CDS>  
 F60-188/Product: pepsin A 3 status experimental <CDS>  
 F54-277/Active site: Asp status predicted  
 F130/Binding site: phosphate (Ser) (covalent) status predicted  
 Query Match 46.0%; Score 923.5; D0 1; Length 388;  
 Best Local Similarity 46.0%; Pred. No. 2-26-59;  
 Matches 189; Conservative: 69; Mismatches 117; Indels 11; Gaps 8;  
 Qy 1 MWKVLGVAFSECV-KTFLRQVTKMTLSGNKLAKMFLK--PYRLSQISFGS 56  
 Db 1 MWKLLGLVALSECTHLYFLKPKVSRNLSNGLKLTSLKLVNPKVSPQAPAP 60  
 Qy 57 MTL-THPLINMLVYGHITGTTPPEQVVDGSSDVAES-FCIMPACAPWFRQ 114  
 Db 61 TLIDGPTLRLTWMEYTGCTGTAAQDTVITDGLSSNVAIVSSLSACTINWFRP 120



Db	1	MKWLGLGVALSECTIVKPLIRKSLRPTLSERGLDPLKLNINPARKYFQKAP	60
Qy	57	NUT-IHPRIHMLVGNITITGPQEVQVDFVQSSDUMWPS-FTCMACSAVWFRQ	114
Db	61	TLVDQDPLWLYENVTGIGTQADPTVTLDTSSGLNVAWYSSGLACTHNRHP	120
Qy	115	LSGSTPQNTKTFITTSQSKMKEFLATVTRIGVLVSTQDPLGVSTG-LEGRN10	172
Db	121	IMBSSTQTSERTVYVTSQSSKGLTAYLVQVGGISDTHQGLSEFTSGSLYAPD	180
Qy	173	QVLGATNPTFSGATITFDNKLQKQALSEPVTATLTKNKGWGSVMFGVDQYKGE	232
Db	181	GTGLGATPSISSGATVFNTHNQLVNSQDLVSLANDSGSVITFGIDSYTGS	240
Qy	233	LAHTPLDAGRWIMRISNKRVTIACSDGALVAVGTSTSGRGLVNNIRHL-RT	291
Db	241	LAHTVPTVETQATVYVTSQSSKGLTAYLVQVGGISDTHQGLSEFTSGSLYAPD	300
Qy	292	APTSKRVYVQKTIYVTSQSSKGLTAYLVQVGGISDTHQGLSEFTSGSLYAPD	350
Db	301	ENSGDGNVCSAISLPDLVITVNOVPPSPNIILO-SESCISGFOONKLPESGE	359
Qy	351	WTGLDGLVARTSVDFRNDRICTA	376
Db	360	LAILDQVTFIRQYTFVFRANNQVCLA	385
RESULT 12			
pepsin A (EC 3.4.23.1) precursor - Japanese macaque			
NAlternate names: pepsinogen A isozyme 1			
CDate: 13-Aug-1996 (sequence)			
CDate: 13-Aug-1996 (revision 18-Oct-1995) test_change 18-Jun-1999			
CAccession: S16681, A91960; A92579; A00981			
R:Kagiyama, T.; Tanabe, K.; Kohwai, O.			
A>Title: Development-dependent expression of isozymic forms of monkey pepsinogens and structure of the precursor			
A:Reference number: S16681; MUID:92037645; PMID:1935977			
A:Accession: S16681			
A:Residues: 1-388 <X>			
A:Cross-references: ENMBL:X59752; NID:938074; PIDN:CAA42424.1; PID:938075			
A:Note: parts of sequence, including amino ends of pepsinogen and activation Intermediate			
J. Bloch 86, 9-18, 1980			
A>Title: Monkey pepsinogens and pepsins. IV. The amino acid sequence of the activation			
A:Reference number: A91960; MUID:6106750; PMID:6773933			
A:Accession: A91960			
A:Molecule type: protein			
A:Residues: 16-62 <X>			
R:Kagiyama, T.; Takahashi, K.			
A>Title: The complete amino acid sequence of monkey pepsinogen A.			
A:Reference number: A92579; MUID:6168132; PMID:3514596			
A:Accession: A92579			
A:Residues: 41-261, 263-388 <X>			
C:Comment: This is the major pepsin isozyme in juveniles and adults.			
C:Comment: Activation is a one-step process.			
F:15/Domain: signal sequence; gastric juice; hydrolase; phosphoprotein; protein digest			
F:16-62/Domain: activation peptide; status predicted <X>			
F:94-277/Active site: Asp 196; status predicted <X>			
F:107-112, 268-272, 311-344/Disulfide bonds: 1 status experimental			
F:107/Binding site: phosphate (Ser) (covalent) status experimental			
Query Match			
Best Local Similarity 45.6%; Score 915.5; DB 1; Length 388;			
Matches 189; Conservative 69; Mismatches 118; Indels 11; Gaps 7;			
Qy	1	MKWLGLGVALSECTIVKPLIRKSLRPTLSERGLDPLKLNINPARKYFQKAP	57

Db	1	MKWLGLGVALSECTIVKPLIRKSLRPTLSERGLDPLKLNINPARKYFQKAP	60
Qy	58	-LTLPLRNLKLVGNITITGPQEVQVDFVQSSDUMWPS-FTCMACSAVWFRQ	114
Db	61	TLVDQDPLWLYENVTGIGTQADPTVTLDTSSGLNVAWYSSGLACTHNRHP	120
Qy	115	LSGSTPQNTKTFITTSQSKMKEFLATVTRIGVLVSTQDPLGVSTG-LEGRN10	172
Db	121	IMBSSTQTSERTVYVTSQSSKGLTAYLVQVGGISDTHQGLSEFTSGSLYAPD	180
Qy	173	QVLGATNPTFSGATITFDNKLQKQALSEPVTATLTKNKGWGSVMFGVDQYKGE	232
Db	181	GTGLGATPSISSGATVFNTHNQLVNSQDLVSLANDSGSVITFGIDSYTGS	240
Qy	233	LAHTPLDAGRWIMRISNKRVTIACSDGALVAVGTSTSGRGLVNNIRHL-RT	291
Db	241	LAHTVPTVETQATVYVTSQSSKGLTAYLVQVGGISDTHQGLSEFTSGSLYAPD	300
Qy	292	APTSKRVYVQKTIYVTSQSSKGLTAYLVQVGGISDTHQGLSEFTSGSLYAPD	350
Db	301	ENSGDGNVCSAISLPDLVITVNOVPPSPNIILO-SESCISGFOONKLPESGE	359
Qy	351	WTGLDGLVARTSVDFRNDRICTA	376
Db	360	LAILDQVTFIRQYTFVFRANNQVCLA	385
RESULT 13			
pepsin A (EC 3.4.23.1) precursor - human			
CDate: 07-Jul-1990 (sequence)			
CDate: 07-Jul-1990 (revision 20-Aug-1994) test_change 29-Aug-1997			
CAccession: B30142; E24334			
R:Evans, M.P.J.; Zeile, B.; Bebelman, J.P.; van Heusechem, V.; Kraakman, L.; Hoffer, A.			
A>Title: Nucleotide sequence comparison of five human pepsinogen A (PGA) genes: cDNA			
A:Reference number: A91627; MUID:89233110; PMID:7714789			
A:Accession: B30142			
A:Residues: 1-27, 29-388 <X>			
A:Note: the authors translated the codon TTC for residue 28 as Leu, GGC for residue 3			
R:Ichihara, K.; Sogawa, K.; Takahashi, K.			
A>Title: Isolation of human, swine, and rat pepsinogens and calf preprochymosin, a			
A:Reference number: A24334; MUID:86055122; PMID:2415509			
A:Accession: E24334			
A:Residues: 1-25, 27-388 <X>			
C:Genetics: A.Gene: DB: P04			
A:Map position: 11q33-11q33			
A:Map position: 11q33-11q33			
A:Map position: 11q33-11q33			
C:Superfamily: pepsin			
F:15/Domain: signal sequence; hydrolase; phosphoprotein; protein digestion; zymoge			
F:16-59/Domain: activation peptide; status experimental <X>			
F:63-388/Protein: pepsin A 4 status predicted <X>			
F:107-112, 268-272, 311-344/Disulfide bonds: 1 status predicted			
F:107/Binding site: phosphate (Ser) (covalent) status predicted			
Query Match			
Best Local Similarity 45.6%; Score 915.5; DB 2; Length 388;			
Matches 189; Conservative 69; Mismatches 117; Indels 11; Gaps 8;			
Qy	1	MKWLGLGVALSECTIVKPLIRKSLRPTLSERGLDPLKLNINPARKYFQKAP	56
Db	1	MKWLGLGVALSECTIVKPLIRKSLRPTLSERGLDPLKLNINPARKYFQKAP	60
Qy	57	NUT-IHPRIHMLVGNITITGPQEVQVDFVQSSDUMWPS-FTCMACSAVWFRQ	114

DQ 61 TLVDQPLQNTLMDYFTGTIGTQAQDTVLTDTGSSNLVSVYSSCLACTHINRP 120  
 QY 115 LGSTQPTNKTFTITVSGSSMGFLATVRIQDVLDTQDPLGSLVFTG--LEGRND 172  
 DQ 121 EVGSLTQTSSEVSTITVSGSGCLGDTVQVGGISDTQITQLSETEPGSLFYATPD 180  
 QY 173 QVGLGNTNPSFGATIPFNKLNGALSEFPVATFLSKNKGQSVVMGQVDQYKGE 232  
 DQ 181 GIGATVPSISSNPVPPVFNINNGVLSQGLSVYDADQKSGVITVIGDSTSTYS 240  
 QY 233 LNPVLEIAGWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 DQ 244 LNPVPSVGTQVWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 QY 245 LNPVPSVGTQVWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 DQ 292 RFDTSKHVYSFKATIPSTITFLINKYPTAKVIRIADSGRGTSAFENYFT-SRE 350  
 DQ 301 ENSDGVNVSASLSLDPVTFVTVNQVPPVPSATILG--SDSGISGQGNVFTSE 359  
 QY 351 TWLGDALRYTSPFDRNDIGLA 376  
 DQ 360 LILQDVIITQVTVFDRANNVGLAA 386  
 RESULT 14  
 B3802 (BC 3.4.23.1) precursor - rhesus macaque  
 C:Species: Oryzctolagus cuniculus (domestic rabbit)  
 C:Date: 14-Jun-1991 #sequence\_revision 20-Sep-1991 #text\_change 23-Feb-1997  
 R:Accession: B3802  
 R:Keywords: B3802  
 J. Biol. Chem. 265, 17031-17038, 1990  
 A:Title: Structure and development of rabbit pepsinogens. Stage-specific zymogens, nu  
 A:Accession: B3802  
 A:Status: preliminary  
 A:Molecule types: RNA  
 A:Keywords: B3802  
 A:Cross-references: GB:M59235; GB:J05638  
 A:Superfamily: pepsin  
 C:Keywords: aspartic proteinase; hydrolase; phosphoprotein; protein digestion  
 Query Match 45.5%; Score 914; DB 1; Length 387;  
 Best Local Similarity 47.5%; Pred. No. 1,4e-68;  
 Matches 184; Conservative 74; Mismatches 119; Indels 10; Gaps 7;  
 QY 1 MKWTLGLVAFSECV-KIPLRQVTKRSLKGNLKLKLEHLYRSLQISF--RGS 56  
 DQ 1 MKWTLGLVAFSECV-KIPLRQVTKRSLKGNLKLKLEHLYRSLQISF--RGS 56  
 QY 57 NUTPLPNTLMVYVNTIGTPQEPQVVDVDTGSSNLVSVYSSCLACTHINRP 115  
 DQ 61 TLVDQPLQNTLMDYFTGTIGTQAQDTVLTDTGSSNLVSVYSSCLACTHINRP 120  
 QY 115 LGSTQPTNKTFTITVSGSSMGFLATVRIQDVLDTQDPLGSLVFTG--LEGRND 172  
 DQ 121 EVGSLTQTSSEVSTITVSGSGCLGDTVQVGGISDTQITQLSETEPGSLFYATPD 180  
 QY 173 QVGLGNTNPSFGATIPFNKLNGALSEFPVATFLSKNKGQSVVMGQVDQYKGE 232  
 DQ 181 GIGATVPSISSNPVPPVFNINNGVLSQGLSVYDADQKSGVITVIGDSTSTYS 240  
 QY 233 LNPVLEIAGWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 DQ 244 LNPVPSVGTQVWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 QY 245 LNPVPSVGTQVWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 DQ 292 RFDTSKHVYSFKATIPSTITFLINKYPTAKVIRIADSGRGTSAFENYFT-SRE 350  
 DQ 301 ENSDGVNVSASLSLDPVTFVTVNQVPPVPSATILG--SDSGISGQGNVFTSE 359  
 QY 351 TWLGDALRYTSPFDRNDIGLA 376  
 DQ 360 LILQDVIITQVTVFDRANNVGLAA 386  
 Search completed: April 2, 2003, 17:45:06  
 Job time : 23 secs

DQ 61 TLVDQPLQNTLMDYFTGTIGTQAQDTVLTDTGSSNLVSVYSSCLACTHINRP 120  
 QY 115 LGSTQPTNKTFTITVSGSSMGFLATVRIQDVLDTQDPLGSLVFTG--LEGRND 172  
 DQ 121 EVGSLTQTSSEVSTITVSGSGCLGDTVQVGGISDTQITQLSETEPGSLFYATPD 180  
 QY 173 QVGLGNTNPSFGATIPFNKLNGALSEFPVATFLSKNKGQSVVMGQVDQYKGE 232  
 DQ 181 GIGATVPSISSNPVPPVFNINNGVLSQGLSVYDADQKSGVITVIGDSTSTYS 240  
 QY 233 LNPVLEIAGWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 DQ 244 LNPVPSVGTQVWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 QY 245 LNPVPSVGTQVWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 DQ 292 RFDTSKHVYSFKATIPSTITFLINKYPTAKVIRIADSGRGTSAFENYFT-SRE 350  
 DQ 301 ENSDGVNVSASLSLDPVTFVTVNQVPPVPSATILG--SDSGISGQGNVFTSE 359  
 QY 351 TWLGDALRYTSPFDRNDIGLA 376  
 DQ 360 LILQDVIITQVTVFDRANNVGLAA 386  
 RESULT 14  
 B3802 (BC 3.4.23.1) precursor - rhesus macaque  
 N:Alternate names: pepsinogen A  
 C:Species: Oryzctolagus cuniculus (domestic rabbit)  
 C:Date: 14-Jun-1991 #sequence\_revision 20-Sep-1991 #text\_change 18-Jun-1999  
 R:Accession: J03039  
 R:Keywords: J03039  
 J. Biol. Chem. 265, 17031-17038, 1990  
 A:Title: Structure and development of rabbit pepsinogens. Stage-specific zymogens, nu  
 A:Accession: J03039  
 A:Status: preliminary  
 A:Molecule types: RNA  
 A:Keywords: J03039  
 A:Cross-references: GB:M0768; MID:934274; PID:934275  
 A:Superfamily: pepsin  
 C:Keywords: aspartic proteinase; gastric juice; hydrolase; phosphoprotein; protein dige  
 C:Date: 14-Jun-1991 #sequence\_revision 20-Sep-1991 #text\_change 18-Jun-1999  
 F:16-36/Domain: pepsinogen isatus predicted <MT>  
 F:16-62/Domain: activation peptide isatus predicted <AP>  
 F:53-359/Product: pepsin isatus predicted <MZ>  
 F:34,277/Activation site: Asp isatus predicted  
 Query Match 45.5%; Score 914.5; DB 1; Length 388;  
 Best Local Similarity 48.4%; Pred. No. 1.2e-66;  
 Matches 187; Conservative 70; Mismatches 116; Indels 11; Gaps 7;  
 QY 1 MKWTLGLVAFSECV-KIPLRQVTKRSLKGNLKLKLEHLYRSLQISFSGN-- 57  
 DQ 1 MKWTLGLVAFSECV-KIPLRQVTKRSLKGNLKLKLEHLYRSLQISFSGN-- 57  
 QY 58 -LITPLPNTLMVYVNTIGTPQEPQVVDVDTGSSNLVSVYSSCLACTHINRP 114  
 DQ 61 TLVDQPLQNTLMDYFTGTIGTQAQDTVLTDTGSSNLVSVYSSCLACTHINRP 120  
 QY 115 LGSTQPTNKTFTITVSGSSMGFLATVRIQDVLDTQDPLGSLVFTG--LEGRND 172  
 DQ 121 EVGSLTQTSSEVSTITVSGSGCLGDTVQVGGISDTQITQLSETEPGSLFYATPD 180  
 QY 173 QVGLGNTNPSFGATIPFNKLNGALSEFPVATFLSKNKGQSVVMGQVDQYKGE 232  
 DQ 181 GIGATVPSISSNPVPPVFNINNGVLSQGLSVYDADQKSGVITVIGDSTSTYS 240  
 QY 233 LNPVLEIAGWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 DQ 244 LNPVPSVGTQVWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 QY 245 LNPVPSVGTQVWVMDIRISNRTVJACSDGCLVALVFTGSHTEGPGLVNNIRLI-RT 291  
 DQ 292 RFDTSKHVYSFKATIPSTITFLINKYPTAKVIRIADSGRGTSAFENYFT-SRE 350  
 DQ 301 ENSDGVNVSASLSLDPVTFVTVNQVPPVPSATILG--SDSGISGQGNVFTSE 359





PROSITE: PS00141; ASP-PROTEASE; 1.  
 Synonym: Aspartyl protease; Glycoprotein; Signal; Multigene family;  
 KW Hydrolyase; Aspartyl protease; Glycoprotein; Signal; Multigene family;

FT CHAIN 16 15 POTENTIAL.  
 FT ACT\_SITE 5 380 PREGNANCY-ASSOCIATED GLYCOPROTEIN 1.  
 FT ACT\_SITE 89 89 BY SIMILARITY.  
 FT ACT\_SITE 90 89 BY SIMILARITY.  
 FT DISULFID 102 107 BY SIMILARITY.  
 FT DISULFID 261 265 BY SIMILARITY.  
 FT DISULFID 303 337 BY SIMILARITY.  
 FT CARBOHYD 74 74 N-LINKED (GLCNAC, ...) (POTENTIAL).  
 FT CARBOHYD 74 74 N-LINKED (GLCNAC, ...) (POTENTIAL).  
 FT CARBOHYD 125 125 N-LINKED (GLCNAC, ...) (POTENTIAL).  
 FT CARBOHYD 182 182 N-LINKED (GLCNAC, ...) (POTENTIAL).  
 FT CONFLICT 60 61 7N -> DG (IN REF. 1; AA SEQUENCE).  
 FT CONFLICT 61 61 7N -> DG (IN REF. 1; AA SEQUENCE).  
 FT CONFLICT 66 66 I -> F (IN REF. 1; AA SEQUENCE).  
 FT SEQUENCE 380 AA: 42847 MW: 770675684586 CRC64.

Query Watch  
 Best Local Similarity 77.74; Score 1559.5; Db 1; Length 380;  
 Matches 297; Conservative 28; Mismatches 54; Indels 1; Gaps 1;

OY 1 MKVTLGLGVAFCVCIKPIQVQVTKTKSLKMKLNKFKHPSLSFGSNULT 60  
 Db 1 MKVTLGLGVAFCVCIKPIQVQVTKTKSLKMKLNKFKHPSLSFGSNULT 60  
 OY 61 IHLRNLMLVYGNITGTTPPEQVDFVDTGSSDLVYPS-FCMPCASAPWFLQASST 119  
 Db 61 IHLRNLMLVYGNITGTTPPEQVDFVDTGSSDLVYPS-FCMPCASAPWFLQASST 119  
 OY 120 PPTNKTFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 179  
 Db 120 PPTNKTFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 179  
 OY 121 PLTNKTKFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 180  
 Db 121 PLTNKTKFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 180  
 OY 180 PNLFSGAPILFDNLKNGALSPVPFYATLKNKQGSVYMGVGVQDHYRTKGLNWT 239  
 Db 180 PNLFSGAPILFDNLKNGALSPVPFYATLKNKQGSVYMGVGVQDHYRTKGLNWT 239  
 OY 240 PNLFSGAPILFDNLKNGALSPVPFYATLKNKQGSVYMGVGVQDHYRTKGLNWT 240  
 Db 240 PNLFSGAPILFDNLKNGALSPVPFYATLKNKQGSVYMGVGVQDHYRTKGLNWT 240  
 OY 241 OAGMSVMDIRLSKMTKACSDCCALVDTGSHGCPRLNHLFTPTFSKY 299  
 Db 241 OAGMSVMDIRLSKMTKACSDCCALVDTGSHGCPRLNHLFTPTFSKY 299  
 OY 242 OAGMSVMDIRLSKMTKACSDCCALVDTGSHGCPRLNHLFTPTFSKY 300  
 Db 242 OAGMSVMDIRLSKMTKACSDCCALVDTGSHGCPRLNHLFTPTFSKY 300  
 OY 300 VSCFATKPLSPFTTNGIKYMTARYLFGDSGCSYSAKFNKVTSTETMLQDEL 359  
 Db 300 VSCFATKPLSPFTTNGIKYMTARYLFGDSGCSYSAKFNKVTSTETMLQDEL 359  
 OY 360 VCSFATKPLSPFTTNGIKYMTARYLFGDSGCSYSAKFNKVTSTETMLQDEL 360  
 Db 360 VCSFATKPLSPFTTNGIKYMTARYLFGDSGCSYSAKFNKVTSTETMLQDEL 360  
 OY 361 HLTVSFVDFDNDRIGLAAV 379  
 Db 361 HLTVSFVDFDNDRIGLAAV 380

RESULT 2  
 ID PAGL\_SHEEP STANDARD: PRT; 382 AA.  
 ID PAGL\_SHEEP STANDARD: PRT; 382 AA.  
 DT 01-NOV-1997 (rel. 35, Created)  
 DT 01-NOV-1997 (rel. 35, Last sequence update)  
 DT 15-JUN-2002 (rel. 41, Last annotation update)  
 GN PAGL\_SHEEP associated glycoprotein 1 precursor (EC 3.4.23.-) (PAG 1).  
 OS Ovis aries (Sheep).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Artiodactyla; Ruminantia; Pecora; Bovidae;  
 OC Bovidae; Caprinae; Ovis.  
 NCBI\_TaxID=9940.  
 RN [1]  
 RC TISSUE: Placenta.  
 RC TISSUE: Placenta.  
 RC TISSUE: Placenta.  
 RX MEDLINE=92052247; PubMed=1946444;  
 RA L. S. Long et al., Nucleic Acids Res. 20: 1000-1004, 1992.  
 RA B. F. et al., J. Biol. Chem. 267: 1000-1004, 1992.

"Identification of the major pregnancy-specific antigens of cattle and sheep as inactive members of the aspartic proteinase family".  
 Proc. Natl. Acad. Sci. U.S.A. 88:10247-10251(1991).  
 CC FUNCTION: APPEARS TO BE PROTEOLYTICALLY INACTIVE.

CC TISSUE SPECIFICITY: TROPHOBLAST AND PLACENTAL TISSUE. PRODUCED SPECIFICALLY IN THE INVASIVE BINUCLEATE CELLS OF THE PLACENTA. BECOMES DETECTABLE IN MATERNAL SERUM SOON AFTER IMPLANTATION.

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CC BMBL: M73951; AAB53144.1;  
 CC M558; P00794; ICMS.  
 CC InterPro: IPR001169; AsparticaseA1.  
 CC InterPro: IPR001169; AsparticaseA1.  
 CC Pfam: PF00029; ASP-PROTIN.  
 CC PROSITE: PS00141; ASP-PROTEASE; 1.

CC Hydrolyase; Aspartyl protease; Glycoprotein; Signal; Multigene family;  
 KW Synonym: 1 15 POTENTIAL.  
 KW PROPEP 16 7382 PREGNANCY-ASSOCIATED GLYCOPROTEIN 1.  
 FT CHAIN 7 382 PREGNANCY-ASSOCIATED GLYCOPROTEIN 1.  
 FT ACT\_SITE 89 89 BY SIMILARITY.  
 FT ACT\_SITE 90 89 BY SIMILARITY.  
 FT DISULFID 102 110 BY SIMILARITY.  
 FT DISULFID 263 267 BY SIMILARITY.  
 FT DISULFID 305 339 BY SIMILARITY.  
 FT CARBOHYD 74 74 N-LINKED (GLCNAC, ...) (POTENTIAL).  
 FT CARBOHYD 74 74 N-LINKED (GLCNAC, ...) (POTENTIAL).  
 FT CARBOHYD 128 128 N-LINKED (GLCNAC, ...) (POTENTIAL).  
 FT SEQUENCE 382 AA: D2847/885F8C CRC64.

Query Watch  
 Best Local Similarity 69.14; Score 1387.5; Db 1; Length 382;  
 Matches 274; Conservative 35; Mismatches 69; Indels 5; Gaps 3;

OY 1 MKVTLGLGVAFCVCIKPIQVQVTKTKSLKMKLNKFKHPSLSFGSNULT 60  
 Db 1 MKVTLGLGVAFCVCIKPIQVQVTKTKSLKMKLNKFKHPSLSFGSNULT 60  
 OY 61 IHLRNLMLVYGNITGTTPPEQVDFVDTGSSDLVYPS-FCMPCASAPWFLQASST 116  
 Db 61 IHLRNLMLVYGNITGTTPPEQVDFVDTGSSDLVYPS-FCMPCASAPWFLQASST 116  
 OY 117 SSTPQTKFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 176  
 Db 117 SSTPQTKFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 176  
 OY 121 PLTNKTKFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 179  
 Db 121 PLTNKTKFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 179  
 OY 177 LNTPLFSGAPILFDNLKNGALSPVPFYATLKNKQGSVYMGVGVQDHYRTKGLNWT 236  
 Db 177 LNTPLFSGAPILFDNLKNGALSPVPFYATLKNKQGSVYMGVGVQDHYRTKGLNWT 236  
 OY 180 LNTPLFSGAPILFDNLKNGALSPVPFYATLKNKQGSVYMGVGVQDHYRTKGLNWT 239  
 Db 180 LNTPLFSGAPILFDNLKNGALSPVPFYATLKNKQGSVYMGVGVQDHYRTKGLNWT 239  
 OY 237 PLTNKTKFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 296  
 Db 237 PLTNKTKFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 296  
 OY 240 PLTNKTKFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 299  
 Db 240 PLTNKTKFTTGGSGMGFLAYTVRIQDLYSTQDGLSVYGLGDRNYTGLGSLY 299  
 OY 297 NYKVFCSATKPLSPFTTNGIKYMTARYLFGDSGCSYSAKFNKVTSTETMLQDEL 356  
 Db 297 NYKVFCSATKPLSPFTTNGIKYMTARYLFGDSGCSYSAKFNKVTSTETMLQDEL 356  
 OY 300 NYKVFCSATKPLSPFTTNGIKYMTARYLFGDSGCSYSAKFNKVTSTETMLQDEL 359  
 Db 300 NYKVFCSATKPLSPFTTNGIKYMTARYLFGDSGCSYSAKFNKVTSTETMLQDEL 359  
 OY 357 AFTRHVSFVDFDNDRIGLAAV 379  
 Db 360 VLRHVSFVDFDNDRIGLAAV 382



DR EMBL: U41424; AAA92055.1; JOTNED.  
 DR EMBL: U37621; AAA92055.1; JOTNED.  
 DR EMBL: L34361; AAA91531.1; JOTNED.  
 DR MESP: P00737; REN.  
 DR MESP: P00737; REN.  
 DR InterPro: IP001461; AsparticaseA1.  
 DR InterPro: IP001969; Asparticase\_site.  
 DR Pfam: PF002652; asp\_rn.  
 DR Pfam: PF002652; asp\_rn.  
 DR PROSITE: PS00141; ASP\_PROTASE; 2.  
 KW Hydrolase; Aspartyl protease; Glycoprotein; Signal; Multigene family;  
 KW Zymogen.  
 FT CHAIN 1 15 POTENTIAL.  
 FT PROPEP 16 7 ACTIVATION PEPTIDE (POTENTIAL).  
 FT ACT\_SITE 94 94 PREGNANCY-ASSOCIATED GLYCOPROTEIN 2.  
 FT ACT\_SITE 94 94 BY SIMILARITY.  
 FT DISULFID 268 268 BY SIMILARITY.  
 FT DISULFID 268 272 BY SIMILARITY.  
 FT DISULFID 341 376 BY SIMILARITY.  
 FT DISULFID 341 376 BY SIMILARITY.  
 FT CARBOHYD 79 79 N-LINKED (GLNAC...?) (POTENTIAL).  
 FT CONFLICT 335 367 MISSING (IN REF. 1) (POTENTIAL).  
 FT SEQUENCE 420 AA; 47132 MW; 094133HCBIJ0B CRC64.  
 Query Match 51.6%; Score 1035.5; Db 1; Length 420;  
 Best Local Similarity 50.04; Pred. No. 4.2e-77;  
 Matches 210; Conservative 57; Mismatches 110; Indels 43; Gaps 7;  
 Oy 1 MKWVLGVGVAFVSCIVKIPVQVTKMTKLSGNLKNLKEHPISQ----LSQSPRG 55  
 Db 1 MKWVLGVGVAFVSCIVKIPVQVTKMTKLSGNLKNLKEHPISQ----LSQSPRG 55  
 Oy 56 SNLITPLINMLNLYGVNITITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 114  
 Db 56 SNLITPLINMLNLYGVNITITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 114  
 Oy 61 QKFSYQVPLRWLYDVGISITGPPQFSVVDTPQSSDLPVSIKSKACVYHSNP 120  
 Db 61 QKFSYQVPLRWLYDVGISITGPPQFSVVDTPQSSDLPVSIKSKACVYHSNP 120  
 Oy 115 LSSTFQPTNKTFTTYSGSKKFIADTVRIGDLYDQVPLSGVYEVG--LEGNDTV 172  
 Db 115 LSSTFQPTNKTFTTYSGSKKFIADTVRIGDLYDQVPLSGVYEVG--LEGNDTV 172  
 Oy 121 SHSSSTPHQKSTKLEYGSKRGKFIQDVTYRIGLSTQKGLSKETGAETAD 180  
 Db 121 SHSSSTPHQKSTKLEYGSKRGKFIQDVTYRIGLSTQKGLSKETGAETAD 180  
 Oy 173 QVLGLWNPVFSQSATIPFDNLKNGQALSEPVPATLSKNGKQSGVSNVSGDYRKYGE 232  
 Db 173 QVLGLWNPVFSQSATIPFDNLKNGQALSEPVPATLSKNGKQSGVSNVSGDYRKYGE 232  
 Oy 181 GILGATYPTAGTGVYITDMLKNGALSEPVPATLSKNGKQSGVSNVSGDYRKYGE 240  
 Db 181 GILGATYPTAGTGVYITDMLKNGALSEPVPATLSKNGKQSGVSNVSGDYRKYGE 240  
 Oy 233 LKMTPLTAGKMRVIMNLYGVNITITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 290  
 Db 233 LKMTPLTAGKMRVIMNLYGVNITITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 290  
 Oy 241 LKWPVATYVQVADIRITAGVIGCPQCAVDYDTGSLRGPQKAVNLSLKH 300  
 Db 241 LKWPVATYVQVADIRITAGVIGCPQCAVDYDTGSLRGPQKAVNLSLKH 300  
 Oy 291 .....TPPDSKHSVSCATKPLIPFTITFCIKY 321  
 Db 291 .....TPPDSKHSVSCATKPLIPFTITFCIKY 321  
 Oy 301 EKXVYPCNKAALPDVFTINNVYVPVQATIKRYVYPMARKALPIVYFTINNDVP 360  
 Db 301 EKXVYPCNKAALPDVFTINNVYVPVQATIKRYVYPMARKALPIVYFTINNDVP 360  
 Oy 322 YWAVYVTPD--SRCTYSAGKPE--NYTPVSETHPLGATVAFYFTINNDVIGLA 378  
 Db 322 YWAVYVTPD--SRCTYSAGKPE--NYTPVSETHPLGATVAFYFTINNDVIGLA 378  
 Oy 361 YPAQATIKNNMNNICTYSTFDITDITL--NORENITLGDVPLXLYFTVDONRIGLA 419  
 Db 361 YPAQATIKNNMNNICTYSTFDITDITL--NORENITLGDVPLXLYFTVDONRIGLA 419  
 RESULT 5  
 PAG\_HORSE  
 AD O28589;  
 DT 01-NOV-1997 (Rel. 35, Created)  
 DT 01-NOV-1997 (Rel. 35, Last sequence update)  
 GN NCBI:taxid:9796;  
 GN PAG.  
 GN Pregnancy-associated glycoprotein precursor (EC 3.4.23.-) (PAG).  
 OC Equus caballus (horse).  
 OC Equus caballus (horse).  
 OC Equus caballus (horse).  
 OC NCBI\_taxid:9796;  
 RN [1]  
 RP SEQUENCE FROM N.A.

TCSS-Placenta;  
 MEDLINE:98221985; PubMed:9561214;  
 Green J., Xie S., Gan X., Roberts R.M.;  
 RA An aspartic proteinase expressed in the equine placenta.;  
 FT MESP: P00737; REN.  
 CC A subcellular location: Extracellular.  
 CC 1- TISSUE SPECIFICITY: TROPHOBLAST AND PLACENTAL TISSUE.  
 CC 1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.  
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 CC or send an email to [license@ebi.ac.uk](mailto:license@ebi.ac.uk).  
 DR EMBL: L38311; AAC14885.1; JOTNED.  
 DR EMBL: L38311; AAC14885.1; JOTNED.  
 DR MESP: P00151; AsparticaseA1.  
 DR InterPro: IP001969; Asparticase\_site.  
 DR Pfam: PF00265; asp\_rn.  
 DR Pfam: PF00265; asp\_rn.  
 DR PROSITE: PS00141; ASP\_PROTASE; 2.  
 KW Hydrolase; Aspartyl protease; Glycoprotein; Signal; Multigene family;  
 KW Zymogen.  
 FT CHAIN 1 15 POTENTIAL.  
 FT PROPEP 16 7 ACTIVATION PEPTIDE (POTENTIAL).  
 FT ACT\_SITE 94 94 PREGNANCY-ASSOCIATED GLYCOPROTEIN 2.  
 FT ACT\_SITE 94 94 BY SIMILARITY.  
 FT DISULFID 268 268 BY SIMILARITY.  
 FT DISULFID 268 270 BY SIMILARITY.  
 FT DISULFID 309 344 BY SIMILARITY.  
 FT CARBOHYD 356 356 N-LINKED (GLNAC...?) (POTENTIAL).  
 FT SEQUENCE 388 AA; 42891 MW; 37876339F8612C5 CRC64.  
 Query Match 49.7%; Score 997.5; Db 1; Length 388;  
 Best Local Similarity 50.54; Pred. No. 4.4e-73;  
 Matches 196; Conservative 72; Mismatches 111; Indels 9; Gaps 6;  
 Oy 1 MKWVLGVGVAFVSCIVKIPVQVTKMTKLSGNLKNLKEHPISQ---15FRGN 57  
 Db 1 MKWVLGVGVAFVSCIVKIPVQVTKMTKLSGNLKNLKEHPISQ---15FRGN 57  
 Oy 58 LITPLINMLNLYGVNITITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 116  
 Db 58 LITPLINMLNLYGVNITITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 116  
 Oy 61 VAEPMNPLDIATGSIITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 120  
 Db 61 VAEPMNPLDIATGSIITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 120  
 Oy 117 STSTFQPTNKTFTTYSGSKKFIADTVRIGDLYDQVPLSGVYEVG--LEGNDTV 174  
 Db 117 STSTFQPTNKTFTTYSGSKKFIADTVRIGDLYDQVPLSGVYEVG--LEGNDTV 174  
 Oy 121 STSTFQPTNKTFTTYSGSKKFIADTVRIGDLYDQVPLSGVYEVG--LEGNDTV 180  
 Db 121 STSTFQPTNKTFTTYSGSKKFIADTVRIGDLYDQVPLSGVYEVG--LEGNDTV 180  
 Oy 175 LGNLTPLINMLNLYGVNITITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 234  
 Db 175 LGNLTPLINMLNLYGVNITITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 234  
 Oy 181 LGNLTPLINMLNLYGVNITITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 240  
 Db 181 LGNLTPLINMLNLYGVNITITTPQEPQVFTDGGSLDWPVS--FCTMPACSPVFRQL 240  
 Oy 235 MIPLEAGBRYVNDIRISMKRYTACSDCALVYFTQSHLIGPCLNHLIRLTPRF 294  
 Db 235 MIPLEAGBRYVNDIRISMKRYTACSDCALVYFTQSHLIGPCLNHLIRLTPRF 294  
 Oy 295 DS--KHYTSCATKPLIPFTITFCIKYPMARATPKDGR--FYVTSFSET 351  
 Db 295 DS--KHYTSCATKPLIPFTITFCIKYPMARATPKDGR--FYVTSFSET 351  
 Oy 301 YSEFTFDICUNWPLIFDITGIDTGPVATNLDQALGALGCTFSEMDINSE 360  
 Db 301 YSEFTFDICUNWPLIFDITGIDTGPVATNLDQALGALGCTFSEMDINSE 360  
 Oy 352 WLGDNALIRYTSYFSDGNRIGLAV 379  
 Db 352 WLGDNALIRYTSYFSDGNRIGLAV 379  
 Oy 361 WLGDNALIRYTSYFSDGNRIGLAV 388  
 Db 361 WLGDNALIRYTSYFSDGNRIGLAV 388  
 RESULT 6  
 PEPT\_RABIT





[illegible]



```

NCBI_TaxID=9343;
SEQUENCE FROM N.A., AND SEQUENCE OF 16-70.
[1]
KAGEYAMA T., TANABE K., KOIWA O.;
DEVIRONMENT-DEPENDENT EXPRESSION OF MONKEY
PEPSINOGEN IN STOMACH MUCOSA DIFFERENCES BETWEEN THEM.*;
Eur. J. Biochem. 202:205-215(1991).
SEQUENCE OF 16-62. PubMed=6773933;
Kageyama T., Takahashi K.;
Monkey pepsinogens and pepsins. IV. The amino acid sequence of the
activation peptide segment of Japanese monkey pepsinogen.*;
J. Biochem. 88:9-16(1980).
SEQUENCE OF 41-388.
MEDLINE=96168132; Pubmed=3514596;
The complete amino acid sequence of monkey pepsinogen A.*;
J. Biol. Chem. 261:4395-4405(1986).
FUNCTION: SHOWS PARTICULARLY BROAD SPECIFICITY, ALTHOUGH BONDS
TO SUBSTRATE AND LYSINE ARE PREFERRED. MANY OTHERS ARE
ALSO CLEAVED TO SOME EXTENT.
CATALYTIC ACTIVITY: Preferential cleavage: hydrophobic, preferably
aromatic, residues in pi and pi' positions. Claveses 1-phe-1-val-2,
16-Tyr-1-leu-17-32-Gly-1-phe-24, 24-Phe-1-phe-23 and 25-Phe-1-
Tyr-36 bonds in the B chain of insulin.
DEVELOPMENTAL STAGE: PREDOMINANT AT THE JUVENILE & ADULT STAGES.
HORMONAL AND RELATED SUBSTANCES
MISCELLANEOUS: EACH PEPSINOGEN IS CONVERTED TO CORRESPONDING
PEPSIN AT pH 2.0 IN PART AS A RESULT OF THE RELEASE OF A 47 AA
ACTIVATION PEPTIDE. THIS IS THE RESULT OF STEWIPASE PROTEOLYTIC
CLEAVAGE VIA AN INTERMEDIATE FORM(S).
SIMILARITY: BELONGS TO PEPTIDASE FAMILY A.
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EMBL: X59792; CA442424.1;
DR PR: A0981; PENQAJ
DR PR: S1961; S196A1
DR PR: S1961; S196B1
DR MBROS: A01; A01.FSN
DR InterPro: IPR001461; Aspartaseal.
DR InterPro: IPRO01969; Aspartase_site.
DR Pfam: PF00036; asp_1; Asparaginase.
DR PRINTS: PR00792; PEPIN.
DR PROSITE: PS00144; ASP-PROLEASE; 2.
DR PROSITE: PS00144; ASP-PROLEASE; Digestion; Zymogen; Phosphorylation;
Multigene family; Signal.
DR SIGNAL 1 15
DR PROPPP 16 40 ACTIVATION PEPTIDE.
DR CHAIN 63 388 ACTIVATION PEPTIDE.
DR DISULFD 107 112 PEPSIN N-1.
DR DISULFD 268 272
DR DISULFD 344 354
DR ACT_SITE 394 394
DR ACT_SITE 277 277
DR MOD_RES 130 130 PHOSPHORYLATION - 3
DR RESIDUES 388 AA A16233 N 4834-0918-SPV333-CF6764;

```

Query Match		45.6%	Sooty owl	DB-1	Length 388.
Best local similarity		48.74%	Pred. no. 1-re-66;		
Matches	188:	Conservative	69:	Mismatches	118; Indels 11; Gaps 7;
Oy	1	KWKLIVGLQVAFSEYCI-KLEHROVMKPTLSCNMNLAKLKHPYLQSLSGCHN-	-57		
Oy					
Db	1	KMKLLGLGVSLSCSTIYVFLVKRSRLNSERGLADLKMLNPAPVFQREAR	60		
Oy	58	-LTITPLHKLMKVGNILGTGFQEVSVDFTSGSSQLVWS-FCFMACSNPVRHQ	114		
Db	61	TLLIDPLELVNTDVTETGICIGTGAQFVIYFGSSHLNFWSPCSSIACTNNLNLP	120		
Oy	115	LASSTQTPNKVTLTTTGSSSKMKGLAUDVIRGLDVOLSTQDPGLSVEVG-	172		
Db	121	QSSSTVOSTSGTSIIITGGSMTGILGDVVGISLDVFNGLSETPKGSFYLPFD	180		
Oy	173	GVLGIANTPNISGALPIPDKNLKAQLSPVATFIYSKHNGDSVSVWFVQDYRKYKE	232		
Db	181	GILGLAYSLSSCATPVNFWDGVLSDGLFSVLYSAZDAAGSSVIFLGDISSTYCS	240		
Oy	233	LKKIPFLAECKRYMHORISMRTYIAJOSDECAVALTISTSHIEGRFLVNTHLI-R	291		
Db	241	LNVVPYSTWGIVSQEIVTFINTEGYPMARTAFATIKRGDCRYSKAENRVTF-S	300		
Oy	294	RPTSDHRVVCATFPYTITITGTYTGTAATFAATFKYGRCYKSFANRVTF-S	350		
Db	301	ENSDDGWECESAISSLPIVTVINGIQVPPSNLIQ-SQGSTCGTCGMOWFTSES	359		
Oy	353	TNIGLDIATLRYSDFVEDNRIGLA	376		
Db	360	VTLTDLTAVTDYVTFEDANNVOYRA	385		
RESULT 12					
ID	PEPA-MACMU	STANDARD:	PRT:	388 AA.	
AC	P11489				
CD	01-OCT-1989 (rel. 12, Created)				
DT	01-OCT-1989 (rel. 12, Sequence update)				
E	15-JUN-2002 (rel. 41, Last annotation update)				
DE	pepsin A precursor (Ex 3.4.23.1).				
DN	pepsin				
GC	pepsin multicistron (phorus macaque)				
GO	eukaryota; Metazoa; Chordata; Carnivora; Vertebrata; Euteleostomi;				
OC	Mammalia; Euarcharia; Primates; Catarrhini; Ceroptithecidae;				
CC	Ceropithecidae; Macaca.				
NCBI	[1]_taxid=95444;				
RP	SEQUENCE FROM N.A.				
NN	MELINDA-BB31166; PubMed-2900796.				
RX	Protein Data Bank: PEP				
RR	Plantia R.J.J.; Eriksson A.W. Francis J.P., Prank J.C., Mager W.H.,				
RT	"Cloning and sequencing of rhesus monkey pepsinogen A cDNA."				
RL	Gene 55:179-185(1989).				
RU	Genes 55:179-185(1989).				
RF	REVISON.				
RA	Zelle B. ;				
RU	Submitted (SEP-1989) to the EMBL/GenBank/DDJJ databases				
CC	- INVOLVING PHENYLALANINE AND LEUCINE ARE PREFERRED. MANY OTHERS ARE ALSO CLEANED TO SOME EXTENT.				
CC	- CATALYTIC ACTIVITY: Preferential cleavage: hydrophobic, preferably aromatic residues in flanking regions. Cleaves L-pep-1-Vai-2.				
CC	16-Tyr-L-Leu-17, 23-Gly-L-Phe-24, 24-Phe-L-Phe-25 and 25-Phe-L-I				
CC	r-76 bonds in the B chain of insulin.				
CC	- SIMILIARITY: BELONGS TO PEPSIDASE FAMILY A!				
CC	This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL Outstation - European Bioinformatics Institute. There are no restrictions on its use as long as it contains the above information and is not modified or altered. This statement is not removed from the database and for protection purposes.				





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RESULT 14
ID PEP3_RABIT STANDARD: PRT: 387 AA.
AC AC P27822-1992 (Rel. 23, Created)
DT 01-AUG-1992 (Rel. 24, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DB Pepsin III precursor (EC:3.1.1) (pepsin A).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OK 131_Taxid=9986;
RX MEDLINE=91009127; Pubmed=2129536;
RA Tsutsui K., Kozawa G.,
RA zymogens, nucleotide sequences of cDNAs, molecular evolution, and
KT zymogens, nucleotide sequences of cDNAs, molecular evolution, and
RT gene expression during development.
CC 1- FUNCTION: SHOWS PARTICULARLY BROAD SPECIFICITY; ALTHOUGH BONDS
CC -1- INVOLVING PHENYLALANINE AND LEUCINE ARE PREFERRED, MANY OTHERS ARE
CC ALSO CLEAVED TO SOME EXTENT.
CC 4-GLU-1-HIS-5, 13-GLU-1-ALA-14, 14-ALA-1-LEU-15, 15-LEU-1-VAL-2,
CC 16-TYR-1-LEU-17, 23-GLY-1-PHE-24, 24-PHE-1-PHE-25 AND 25-PHE-1-
CC -1- DEVELOPMENTAL STAGE: PEPINOGENS IN GROUP I, II, AND III WHERE
CC THE PREDOMINANT ZYMOKENS AT LATE POSTNATAL STAGE.
CC -1- MISCELLANEOUS: THE EXPRESSION OF PEPINOGEN GENES IS REGULATED BY
CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
CC THIS SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC or send an email to license@ebi.ac.uk (see http://www.ebi.ac.uk/announce/)
CC
CC EMBL: M5237; AAA5570.1;
CC DR HSP: P0071; 4282.
CC DR MEROPS; A01.001; -.
CC DR InterPro: IP001461; AsparticaseA1.
CC DR Pfam: PF00056; asp1; AsparticaseA1.
CC DR PRINTS; PR00792; PEP3IN.
CC DR PROSITE; PS00144; ASP-PROTASE; 2. Position; Zymogen; Signal;
CC KMW Phosphorylation; Multigene family.
CC SIGNAL 1 15
FT PROPEP 16 359 ACTIVATION PEPTIDE.
FT PROPEP 16 359 PHOSPHORYLATION (POTENTIAL).
FT MOD_RES 129 129 BY SIMILARITY.
FT ACT_SITE 93 129 BY SIMILARITY.
FT ACT_SITE 276 276 BY SIMILARITY.
FT DISULFID 267 271 BY SIMILARITY.
FT DISULFID 310 343 BY SIMILARITY.
FT SIGNAL 367 AA; 41969 MW; 15A5YAC81F36FPEP CRC4;
SQ SEQUENCE 387 AA; 45.5% Score 91d; DB 1; Length 387;
Query Match 45.5% Score 91d; DB 1; Length 387;
Best Local Similarity 47.6% Pred. No. 2.3e-66;
Matches 185; Conservative 75; Mismatches 115; Indels 14; Gaps 8;
OY 1 MKWLVGLAVSFECTV-KTIPQKVTMRKTSGKNKLFKEHPYLS-----QLSR 54
DB 1 MKWLVGLGLAIEGIEIKTIPQKLVKRSKLLKELGKLTATKTNLTKATYLPAAAF- 59
OY 55 GSKLTHPLNINLVNIGNTIGTPQKQVYDTGSSLLWPS-TCTMCAGSNWFR 113

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DB 60 -DSVPTFLENLDJTFOTIGTIPQDFTVFDGSSLLWPSVYSSACSVHGNP 118
OY 114 QLGSTQPTNKFTFFITGSMGFLATVVICGLVDSVDFGLSVVEIG--LGGMY 171
DB 119 PEGSFGVTSSELGTSIGTGTGATVGVNEDNGIFGLSEKSGSLYAF 231
OY 172 KQGVFWHMSISGAIPVQVNLQKQATSEPVFVFLKNNQSGVQWQVQVYTK 178
DB 179 DLGLGLAFVTSSTQATPVFMNMNGLSVDFSVLLSDSGSGVWFGGLDSYITG 238
OY 232 ELKMDIETAKGVNHHVHSKVTYVATGSGGSAVWVTSRHSQDLNKHRLR 290
DB 239 SLELVVVEYEGVITDTSITDNGETACAGCAVLTGTVTSLAGFAISNTQYGA 298
OY 291 PRFQVQVYSGPARKVLEGEFTTNGIKVYKAPVIFMGRGCVSAKENVVF 349
DB 299 SENSCKMYVSSGMSPLNIVFTINQVTPVPSANTILEED-DACISDFCNLDITVC 357
OY 350 THTVLTGATPRFVYSDRQDQGLAAR 378
DB 358 EMTLGDVYFQVTFDRAHQGLGAA 386
RESULT 15
ID PEP4_RABIT STANDARD: PRT: 387 AA.
AC AC P27822-1992 (Rel. 24, Created)
DT 01-DEC-1992 (Rel. 24, Last sequence update)
DT 15-JUN-2002 (Rel. 41, Last annotation update)
DB Pepsin III precursor (EC:3.1.1) (pepsin A).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OK 131_Taxid=9986;
RX MEDLINE=91009127; Pubmed=2129536;
RA Tsutsui K., Kozawa G.,
RA zymogens, nucleotide sequences of cDNAs, molecular evolution, and
KT zymogens, nucleotide sequences of cDNAs, molecular evolution, and
RT gene expression during development.
CC 1- FUNCTION: SHOWS PARTICULARLY BROAD SPECIFICITY; ALTHOUGH BONDS
CC -1- INVOLVING PHENYLALANINE AND LEUCINE ARE PREFERRED, MANY OTHERS ARE
CC ALSO CLEAVED TO SOME EXTENT.
CC 4-GLU-1-HIS-5, 13-GLU-1-ALA-14, 14-ALA-1-LEU-15, 15-LEU-1-VAL-2,
CC 16-TYR-1-LEU-17, 23-GLY-1-PHE-24, 24-PHE-1-PHE-25 AND 25-PHE-1-
CC -1- DEVELOPMENTAL STAGE: PEPINOGENS IN GROUP I, II, AND III WHERE
CC THE PREDOMINANT ZYMOKENS AT LATE POSTNATAL STAGE.
CC -1- MISCELLANEOUS: THE EXPRESSION OF PEPINOGEN GENES IS REGULATED BY
CC -1- SIMILARITY: BELONGS TO PEPTIDASE FAMILY A1.
CC PIR; D38302; D38302.
CC KMW P0090; PEPN.
CC DR MEROPS; A01.001; -.
CC DR InterPro: IP001461; AsparticaseA1.
CC DR Pfam: PF00056; asp1; AsparticaseA1.
CC DR PROSITE; PS00144; ASP-PROTASE; 2.
CC KMW Phosphorylation; Multigene family.
CC SIGNAL 1 15
FT PROPEP 16 359 ACTIVATION PEPTIDE.
FT PROPEP 16 359 PHOSPHORYLATION (POTENTIAL).
FT MOD_RES 129 129 BY SIMILARITY.
FT ACT_SITE 93 129 BY SIMILARITY.
FT ACT_SITE 276 276 BY SIMILARITY.
FT DISULFID 267 271 BY SIMILARITY.
FT DISULFID 310 343 BY SIMILARITY.
FT SIGNAL 367 AA; 41969 MW; 15A5YAC81F36FPEP CRC4;
SQ SEQUENCE 387 AA; 45.5% Score 91d; DB 1; Length 387;
Query Match 45.5% Score 91d; DB 1; Length 387;
Best Local Similarity 47.6% Pred. No. 2.3e-66;
Matches 185; Conservative 75; Mismatches 115; Indels 14; Gaps 8;
OY 1 MKWLVGLAVSFECTV-KTIPQKVTMRKTSGKNKLFKEHPYLS-----QLSR 54
DB 1 MKWLVGLGLAIEGIEIKTIPQKLVKRSKLLKELGKLTATKTNLTKATYLPAAAF- 59
OY 55 GSKLTHPLNINLVNIGNTIGTPQKQVYDTGSSLLWPS-TCTMCAGSNWFR 113

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FT DISULEID 106 111 BY SIMILARITY.
FT DISULEID 267 271 BY SIMILARITY.
FT DISULEID 310 343 BY SIMILARITY.
SQ SEQUENCE 387 AA: 42052 MW: 21AD00782A8985 CRC64:

Query Watch 45.3k; Score 909; DB 1; Length 387;
Best Local Similarity 47.2k; Pred. No. 5.9e-56;
Matches 183; Conservative 76; Mismatches 119; Indels 10; Gaps 7;

OY 1 MWIVLLGLVAFSECV-KIPLRQVYMKTKLSCKNKLKFKHPYELQSISE---KGS 56
DB 1 MWKLLGLLALSECIVHVPVLRKASLRKMLKELGLQDYIAKTHETPNATKYPAKTEFA 60
OY 57 NUTHPRLNINLVNIGTITGPQEPQVFTGSSOLAVES-ECTMPCASAPWPKOL 115
DB 61 TVSTESLENTIDAEFTTISGTTPQDPTVFTPGSSMLAVFTSCSLACALIKKFNPE 120
OY 116 QNSTFQPTNFTTITGCSGKMGFLAVDVRIGDLYVDQDPGLSVVEGLE--GRNYDQ 173
DB 121 DNSTYQCTSELISITGSMGFLDVTDRVGVSTEDTQINQISKEPGLTFLPAPFDG 180
OY 174 VGLNWPNTSFGAIPFDNLNKGALSPWPAFYLSKNKQSGSVWVGQVDRQYKGEI 233
DB 181 IGLAPYFSSSDNPVFDMMNGLVSDQLFVYLSDDKQKGLWFGIGDSYTGSL 240
OY 234 NWPLTEKGRVMDRISKRTYVIAKSGCEALVHTGTSIDGRPLNNTHLLI-PTK 292
DB 241 MWVSVETQWQIMDSVINGETIACDSQALVDTSTLLTQPTAISINQSYTGASK 300
OY 293 PDSKHYVSTATKLPISITFTINGIKYPMFANAYIFKDSRQCYSAKPMYVPT-SRET 351
DB 301 MLGENTYCSAIDGLDVIPTINGIQTPUPASATLAKD-DICTSLGDMNWTTCGL 359
OY 352 WILGDATLRVFSVDRKNDRIQARAV 379
DB 360 WILGDVTRQVTFVDRANNOLGAAY 387

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Search completed: April 2, 2003, 17:45:39  
 Job time : 27 secs













\*Pregnancy-associated bovine and ovine glycoproteins exhibit spatially and temporally distinct expression patterns during pregnancy.\*

RL Biol. Reprod. 62:1624-1631(2000).

DR HSP: P00794. 4CHS.

DR MEROPS: A01.971. -

DR InterPro: IPR001461. Asparticaseal.

DR PRINTS: P00732. PEPIN.

SQ SEQUENCE 380 AA; 42649 MW; 9AF53F618CA130CB CRC64;

Query Match 75.1% Score 1508.5 DB 6; Length 380;

Best Local Similarity 75.1%; Pred. No. 56-120; Idels 1; Gaps 380;

Matches 288; Conservative 33; Mismatches 1;

QY 1 MKWVLLGLVAFSECVIKIPKRWKTKMTLSKMKLAKELHVPVLSQISFGNSKIT 60

DB 1 MKWVLLGLVAFSECVIKIPKRWKTKMTLSKMKLAKELHVPVLSQISFGNSKIT 60

QY 61 HPLKNTLMVLYVGNITIGTPPEPVDFVDTGSSDLPVPS-PTCHMACSAWPHQLQSST 119

DB 61 HPLKNTLMVLYVGNITIGTPPEPVDFVDTGSSDLPVPS-PTCHMACSAWPHQLQSST 119

QY 61 HPLKNTLMVLYVGNITIGTPPEPVDFVDTGSSDLPVPS-PTCHMACSAWPHQLQSST 120

DB 61 HPLKNTLMVLYVGNITIGTPPEPVDFVDTGSSDLPVPS-PTCHMACSAWPHQLQSST 120

QY 120 PPNKNTFTTSGSSWKKFLAVYVRLGDLVSTDFVGLSVGLGKRYVGLGKRYVGLGKRYV 179

DB 120 PPNKNTFTTSGSSWKKFLAVYVRLGDLVSTDFVGLSVGLGKRYVGLGKRYVGLGKRYV 179

QY 121 PPNKNTFTTSGSSWKKFLAVYVRLGDLVSTDFVGLSVGLGKRYVGLGKRYVGLGKRYV 180

DB 121 PPNKNTFTTSGSSWKKFLAVYVRLGDLVSTDFVGLSVGLGKRYVGLGKRYVGLGKRYV 180

QY 180 PPNKNTFTTSGSSWKKFLAVYVRLGDLVSTDFVGLSVGLGKRYVGLGKRYVGLGKRYV 239

DB 180 PPNKNTFTTSGSSWKKFLAVYVRLGDLVSTDFVGLSVGLGKRYVGLGKRYVGLGKRYV 239

QY 240 DAGWVWMDIRSMRYVACSDCALVPTGTSRTEPCRLNHLIRLIRFPDSKNT 299

DB 240 DAGWVWMDIRSMRYVACSDCALVPTGTSRTEPCRLNHLIRLIRFPDSKNT 299

QY 241 QAGWNTIMDSISITKIVACSGCVAFVDTGTAETGCPVLDNKKLIRANPKRSKY 300

DB 241 QAGWNTIMDSISITKIVACSGCVAFVDTGTAETGCPVLDNKKLIRANPKRSKY 300

QY 300 VSCATKILPSITFTINGIKYPMARATIFPDUSGRSAKFNVTYSRTNLGDAFL 359

DB 300 VSCATKILPSITFTINGIKYPMARATIFPDUSGRSAKFNVTYSRTNLGDAFL 359

QY 360 RYTSVFDRNDRIGLARAV 379

DB 360 RYTSVFDRNDRIGLARAV 379

QY 361 RYTSVFDRNDRIGLARAV 380

DB 361 RYTSVFDRNDRIGLARAV 380

RESULT 10

ID 046494 PRELIMINARY; PRT: 379 AA.

AC 046494

DT 01-JUN-1998 (TrEMBLrel. 06, Created)

DT 01-JUN-1998 (TrEMBLrel. 06, Last sequence update)

DT 01-JUN-2002 (TrEMBLrel. 21, Last annotation update)

OS Pregnancy-associated glycoprotein 6.

UN PAD2, hircus (Bovine)

CC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

CC Mammalia; Ruminantia; Artiodactyla; Ruminantia; Pecora; Bovidae;

CC Ruminantia; Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

CC Review: Bovinae; Bos.

InterPro: IPR001461. Asparticaseal.

InterPro: IPR001461. Asparticaseal.

InterPro: IPR001461. Asparticaseal.

InterPro: IPR001461. Asparticaseal.

InterPro: IPR001461. Asparticaseal.

InterPro: IPR001461. Asparticaseal.

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InterPro: IPR001461. Asparticaseal.

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Query Match          72 24: Score 1449 5; DB 6; Length 377;
Best Local Similarity 75.14; Pred. No. 5,le-115;
Matches 284; Conservative 25; Mismatches 66; Indels 3; Gaps 2;

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DB 1 MKNVILGLVAFSECTVIGLPDQVTKMTKTSCKNMLANLKEUPHLSQISFGSNLRI 60
DB 1 MKNVILGLVAFSECTVIGLPDQVTKMTKTSCKNMLANLKEUPHLSQISFGSNLRI 60
QY 61 HPLNTHLVGNVITIGTPOEDQVDFGSSDQANTPS-ECTWACASAPRFPOLASST 119
DB 61 HPLNTHLVGNVITIGTPOEDQVDFGSSDQANTPS-ECTWACASAPRFPOLASST 119
QY 61 HPLNTHLVGNVITIGTPOEDQVDFGSSDQANTPS-ECTWACASAPRFPOLASST 120
DB 61 HPLNTHLVGNVITIGTPOEDQVDFGSSDQANTPS-ECTWACASAPRFPOLASST 120
QY 120 PPTNKTFTYSGSKMGFLAYTVRIGDGLVSTDDPGLSPVEYGLGKNWYDGLVAY 179
DB 120 PPTNKTFTYSGSKMGFLAYTVRIGDGLVSTDDPGLSPVEYGLGKNWYDGLVAY 179
QY 180 PNISFGCAPIFONLKNQALREHVFATYLSKNQSGVPMGQVNOVYKGLNWPILI 239
DB 180 PNISFGCAPIFONLKNQALREHVFATYLSKNQSGVPMGQVNOVYKGLNWPILI 239
QY 181 PONSFTTIPITPDLNKNQALREHVFATYLSKNQSGVPMGQVNOVYKGLNWPILI 238
DB 181 PONSFTTIPITPDLNKNQALREHVFATYLSKNQSGVPMGQVNOVYKGLNWPILI 238
QY 240 RAGDNVHNDISMRVYACSGCCALVYFOTSEIGGDLNWNTHLRTFRPFSKHY 299
DB 240 RAGDNVHNDISMRVYACSGCCALVYFOTSEIGGDLNWNTHLRTFRPFSKHY 299
QY 239 QAGNGLNDISMRVYACSGCCALVYFOTSEIGGDLNWNTHLRTFRPFSKHY 298
DB 239 QAGNGLNDISMRVYACSGCCALVYFOTSEIGGDLNWNTHLRTFRPFSKHY 298
QY 300 VSCENKYLPSITFTINGIKYHARAYTFQNGKVCYKKNVYKSNFTMLGDATL 359
DB 300 VSCENKYLPSITFTINGIKYHARAYTFQNGKVCYKKNVYKSNFTMLGDATL 359
QY 299 ISCFATVSLPSITFTINGIKYHARAYTFQNGKVCYKKNVYKSNFTMLGDATL 358
DB 299 ISCFATVSLPSITFTINGIKYHARAYTFQNGKVCYKKNVYKSNFTMLGDATL 358
QY 360 RYVSFVDRNDIGLAA 377
DB 360 RYVSFVDRNDIGLAA 377
QY 359 RYVSFVDRNDIGLAA 376
DB 359 RYVSFVDRNDIGLAA 376

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Search completed: April 2, 2003, 17:50:11  
Job time : 89 secs



Db 9 LVLLLEGAQSGSLRVPLRHPSLKLKLRANSQLSFKNKSH--NLMQTOFTSCMOQSA 66  
 Qy 60 IHPILRNINLVNGNITGTTPQFQVQVDFGSSDVLWVPS--FCTPMACSAVPWFQLOSS 118  
 Db 67 KEPLINTLMDTFTIGSGSPQNFVTIQTGSSNLMKLVNPAVCTSPACKTSHSPQSSS 126  
 Qy 119 TFOPTNKTFTITYGSGSKGFLAVTVRIQDVLSTQDFGLSVVEYG--LGRNNDVGLG 176  
 Db 127 TTSQPOGSGSTQGTGSLGIGADQVSVGLTVYVQOQESVTERPQTFVDKDFGLG 186  
 Qy 177 LATNPISFSGAIPFDNLKNGALSFPVAFYLSKKNO--EGSVNMGQVQDQHYGKELN 234  
 Db 187 LTGTSFLAVGQVDFDNLKNGALVDPNPSVMSNPGGAGSLTGTGDSHFSGSLN 246  
 Qy 235 WPLLEAGRMKVMORISMKVFIAGSDCAVALVTGTHSHIGPGLVNNHRLITRPF 284  
 Db 247 WVPVTKQVQALINQVGTGVCFCSECQAVDTGTSILTGSSEKIKOLQNALGAPV 306  
 Qy 295 DSKHVSFCATKYSLTFTIINGIKYKPMTAAYI---FKSGRCYSNFKENTYR--TSRE 350  
 Db 307 DGEAFVACNLKMWBPDTFTIINGVTPYLSGFTVPLTDVQVQFCSSGFGCLDHPFAP 366  
 Qy 351 TWLGDALFARFVSFQDNRIGLARAV 379  
 Db 367 LMLGDVITROFTSVFDRGNRVGLAPV 395

## RESULT 2

US-09-032-523-9

; Sequence 9, Application US/09032523

; BEST LOCAL SIMILARITY

; GENERAL INFORMATION

; APPLICANT: Bandman, Olga

; APPLICANT: Billman, Jennifer L.

; APPLICANT: Gieseler, Karl L.

; APPLICANT: Bugh, Mariah

; TITLE OF INVENTOR: HUMAN PROTEINASE MOLECULES

; ADDRESS: Incyte Pharmaceuticals, Inc.

; CORRESPONDENCE ADDRESS:

; COUNTRY: USA

; CITY: Palo Alto

; STATE: CA

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Diskette

; COMPUTER: IBM Compatible

; SOFTWARE: REALSO FOR Windows Version 2.0

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/09/032,523

; CLASSIFICATION:

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER:

; ATTORNEY/AGENT INFORMATION:

; NAME: Billings, Lucy J

; REGISTRATION NUMBER: 36-749

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 650-845-0555

; TELEFAX: 650-845-4166

; INFORMATION FOR SEQ ID NO: 9:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 396 amino acids

; STRANDNESS: single

; TOPOLOGY: linear

; IMMEDIATE SOURCE:

; LIBRARY: Genbank  
 ; CLONE: 181994  
 ; US-09-032-523-9

; Query Match

; Best Local Similarity

; Matches 155; Conservative

; 38.5%; Score 772.5; DB 4;

; Length 396;

; Mismatches 147; Indels 15; Gaps

; 7;

; 4 LVLLLEGAQSGSLRVPLRHPSLKLKLRANSQLSFKNKSH--NLMQTOFTSCMOQSA 66

; Db 9 LVLLLEGAQSGSLRVPLRHPSLKLKLRANSQLSFKNKSH--NLMQTOFTSCMOQSA 66

; Qy 60 IHPILRNINLVNGNITGTTPQFQVQVDFGSSDVLWVPS--FCTPMACSAVPWFQLOSS 118

; Db 67 KEPLINTLMDTFTIGSGSPQNFVTIQTGSSNLMKLVNPAVCTSPACKTSHSPQSSS 126

; Qy 119 TFOPTNKTFTITYGSGSKGFLAVTVRIQDVLSTQDFGLSVVEYG--LGRNNDVGLG 176

; Db 127 TTSQPOGSGSTQGTGSLGIGADQVSVGLTVYVQOQESVTERPQTFVDKDFGLG 186

; Qy 177 LATNPISFSGAIPFDNLKNGALSFPVAFYLSKKNO--EGSVNMGQVQDQHYGKELN 234

; Db 187 LTGTSFLAVGQVDFDNLKNGALVDPNPSVMSNPGGAGSLTGTGDSHFSGSLN 246

; Qy 235 WPLLEAGRMKVMORISMKVFIAGSDCAVALVTGTHSHIGPGLVNNHRLITRPF 284

; Db 247 WVPVTKQVQALINQVGTGVCFCSECQAVDTGTSILTGSSEKIKOLQNALGAPV 306

; Qy 295 DSKHVSFCATKYSLTFTIINGIKYKPMTAAYI---FKSGRCYSNFKENTYR--TSRE 350

; Db 307 DGEAFVACNLKMWBPDTFTIINGVTPYLSGFTVPLTDVQVQFCSSGFGCLDHPFAP 366

; Qy 351 TWLGDALFARFVSFQDNRIGLARAV 379

; Db 367 LMLGDVITROFTSVFDRGNRVGLAPV 395

## RESULT 3

; Sequence 13, Application US/08915095A

; BEST LOCAL SIMILARITY

; GENERAL INFORMATION

; APPLICANT: Bandman, Olga

; APPLICANT: Billman, Jennifer L.

; APPLICANT: Gieseler, Karl L.

; APPLICANT: Bugh, Mariah

; TITLE OF INVENTOR: HUMAN OSTEOCLAST-DERIVED CATHETERIN

; ADDRESS: Incyte Pharmaceuticals, Inc.

; CORRESPONDENCE ADDRESS:

; COUNTRY: USA

; CITY: Palo Alto

; STATE: CA

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Diskette

; COMPUTER: IBM Compatible

; SOFTWARE: REALSO FOR Windows Version 2.0

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/08/915,095A

; CLASSIFICATION:

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER:

; ATTORNEY/AGENT INFORMATION:

; NAME: Billings, Lucy J

; REGISTRATION NUMBER: 36-749

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 650-845-0555

; TELEFAX: 650-845-4166

; INFORMATION FOR SEQ ID NO: 9:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 396 amino acids

; STRANDNESS: single

; TOPOLOGY: linear

; IMMEDIATE SOURCE:

; Query Match

; Best Local Similarity

; Matches 155; Conservative

; 38.5%; Score 772.5; DB 4;

; Length 396;

; Mismatches 147; Indels 15; Gaps

; 7;

; 4 LVLLLEGAQSGSLRVPLRHPSLKLKLRANSQLSFKNKSH--NLMQTOFTSCMOQSA 66

; Db 9 LVLLLEGAQSGSLRVPLRHPSLKLKLRANSQLSFKNKSH--NLMQTOFTSCMOQSA 66

; Qy 60 IHPILRNINLVNGNITGTTPQFQVQVDFGSSDVLWVPS--FCTPMACSAVPWFQLOSS 118

; Db 67 KEPLINTLMDTFTIGSGSPQNFVTIQTGSSNLMKLVNPAVCTSPACKTSHSPQSSS 126

; Qy 119 TFOPTNKTFTITYGSGSKGFLAVTVRIQDVLSTQDFGLSVVEYG--LGRNNDVGLG 176

; Db 127 TTSQPOGSGSTQGTGSLGIGADQVSVGLTVYVQOQESVTERPQTFVDKDFGLG 186

; Qy 177 LATNPISFSGAIPFDNLKNGALSFPVAFYLSKKNO--EGSVNMGQVQDQHYGKELN 234

187	LQYLSVLEAGWVRVPMFVNMMQNVLDPHFVSIVNSNPEGASGLIFGGDYNISHSFSGLN	244
235	WPIYLCEAGWVRVIMSMKVTIACSGCGLALVWVITSTIBFGFLOVMNHRIILPTFP	294
245	WIPFLVKNVGNIALONTVOGTGVNCSSECCAVLWDTSELSTSDKLGNLCAGAP	306
295	DQSKYSCFRKPLASTIKTINKTFPFAHNT--FDQSHGSCSAFTENYR--ESRE	350
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351	TWIGLADJAWBWSYDQVDRNGIRGLABAV	379
367	LMILGDVFIHQTSVFGRCHNRVGLABV	395
RESULT 4		
US-08-798-096-13		
Sequence 13 Application US/08798096		
Sequence 13 Description HUMAN CATHETIN		
GENERAL INFORMATION:		
APPLICANT: Hastings, et al.		
TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHETIN		
CURRENT INVENTION NUMBER: US/08/798-096		
CURRENT APPLICATION NUMBER: US/08/798-096		
CURRENT FILING DATE: 1997-02-12		
NUMBER OF SEQ ID NOS: 14		
SEQUENCE IDENTIFICATION Ver. 2.1		
SEQ ID NO 13		
LENGTH: 396		
TYPE: PRT		
ORGANISM: Homo sapiens		
US-08-798-096-13		

[illegible]

RESULT 5  
US-08-798-095A-13  
: Sequence 13. Application US/08798095A  
: Patent No. 6423507  
: GENERAL INFORMATION:  
: APPLICANT: HASTINGS, et al.  
: TITLE OR INVENTION: HUMAN OSTEOCLAST-DERIVED CATHREPSIN

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Best Local Similarity 35.0%, Pred. No. 7.3e-61.
Matches 136; Conservative 64; Mismatches 127; Indels 62; Gaps
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Db 9 IIVLLEIAGQSGIVHVLRIHRLSRLKRLARQLSEFWSH--NLKQITFSSNQDQA 66
QY 60 IIVPLNIAWLVYVNTITGTPRQVQVYVYVQVGGSLDPS--FTWVQVAPVYVHQLQSS 118
Db 67 KPLIIVLDMYEVITGISTGSPQVFTVFDGTSNLSVYVTCISPAKTSYRQSGSS 126
QY 119 TQPVWVFTITGSSGAKELAVYVGLVGLVYVQVGGSLVYVQV--LEGWVQVGL 176
Db 127 TQVQVQSGVSTQVGLSGLIGVQVYVGLVYVQVGGVFTVQVQVDFGLG 186
QY 177 LKYNVSPGSAVITFENKALQALISPVYVLSKWKQ--QGVNVRQVQVQVTKESL 234
Db 187 LGTFSLVAGVYVFTVDMNMAQVLMVYVYVMSNPGGASGLITFGTSHIFSSGLN 246
QY 235 WPLTEAGRWVWVWIKSMETVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYV 294
Db 247 WYVTFQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQV 261
QY 295 DSKVQVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYV 350
Db 262 --NVAPECANLWVYVFTVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYV 319
QY 351 TWVGLQVATLVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYV 379
Db 320 LAILGVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYV 348

RESULT 9
: Sequence 12, Application US/092080074
: Sequence 13, Application US/0874691
: GENERAL INFORMATION
: APPLICANT: HASTINGS, ET AL.
: TITLE OF INVENTION: Human Osteoclast-Derived Cathepsin
: INVENTOR: HASTINGS, ET AL.
: CORRESPONDENCE ADDRESS: 14
: ADDRESSEE: CARELLA, BYRNE, BRAIN, GLIFFILLAN,
: ADDRESS: CECCHI, STERNAT & OLSTEIN
: ATTORNEY/AGENT INFORMATION: 14
: CITY: ROSELAND
: STATE: NEW JERSEY
: COUNTRY: USA
: COMPUTER READABLE FORM:
: MEDIUM TYPE: 3.5 INCH DISKETTE
: COMPUTER: IBM PS/2
: SOFTWARE: SYMBIOSIS
: SOFTWARE: WORD PERFECT 5.1
: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/092080074
: FILING DATE: 20-NOV-1994
: CLASSIFICATION:
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: No. 5501969e
: FILING DATE: No. 015169e
: ATTORNEY/AGENT INFORMATION:
: NAME: FERRARO, GREGORY D.
: REFERENCE/DOCKET NUMBER: 36,134
: TELEPHONE: 201-994-1700
: TELEFAX: 201-994-1744
: INFORMATION FOR SEO ID NO: 12:
: SOURCE: AMINO ACIDS
: LUNICH: 412 AMINO ACIDS
: TYPE: AMINO ACID
: STANDARDS:
: TOP-LOG: LINEAR
:
: BEST LOCAL SIMILARITY 35.0%, Pred. No. 7.3e-61.
: MATCHES 136; CONSERVATIVE 64; MISMATCHES 127; INDELS 62; GAPS
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: QY 4 IIVLGIVASVSCIVKIVYQVGVNKKVITGLSGKANKLWFKVIFLISIFRGS---NLT 59
: DB 9 IIVLLEIAGQSGIVHVLRIHRLSRLKRLARQLSEFWSH--NLKQITFSSNQDQA 66
: QY 60 IIVPLNIAWLVYVNTITGTPRQVQVYVYVQVGGSLDPS--FTWVQVAPVYVHQLQSS 118
: DB 67 KPLIIVLDMYEVITGISTGSPQVFTVFDGTSNLSVYVTCISPAKTSYRQSGSS 126
: QY 119 TQPVWVFTITGSSGAKELAVYVGLVGLVYVQVGGSLVYVQV--LEGWVQVGL 176
: DB 127 TQVQVQSGVSTQVGLSGLIGVQVYVGLVYVQVGGVFTVQVQVDFGLG 186
: QY 177 LKYNVSPGSAVITFENKALQALISPVYVLSKWKQ--QGVNVRQVQVQVTKESL 234
: DB 187 LGTFSLVAGVYVFTVDMNMAQVLMVYVYVMSNPGGASGLITFGTSHIFSSGLN 246
: QY 235 WPLTEAGRWVWVWIKSMETVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYV 294
: DB 247 WYVTFQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQV 261
: QY 295 DSKVQVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYV 350
: DB 262 --NVAPECANLWVYVFTVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYV 319
: QY 351 TWVGLQVATLVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYV 379
: DB 320 LAILGVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYVYV 348
:
: RESULT 10
: US-08-208-007A-12
: Sequence 12, Application US/092080074
: Sequence 13, Application US/0874691
: GENERAL INFORMATION
: APPLICANT: Keolach, Gerald
: APPLICANT: Lip, Xihui
: TITLE OF INVENTION: Cloning and Characterization of Napsin
: INVENTOR: Keolach, Gerald
: CORRESPONDENCE ADDRESS: 14
: ADDRESSEE: Keolach, Gerald
: ATTORNEY/AGENT INFORMATION: 14
: CITY: ATLANTA
: STATE: GA
: COUNTRY: USA
: COMPUTER READABLE FORM:
: MEDIUM TYPE: 3.5 INCH DISKETTE
: COMPUTER: IBM PS/2
: SOFTWARE: SYMBIOSIS
: SOFTWARE: WORD PERFECT 5.1
: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/0874691
: FILING DATE: 20-NOV-1997
: CLASSIFICATION:
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: US 60/031,196
: FILING DATE: 20-NOV-1996
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: US 60/046,126
: FILING DATE: 20-NOV-1996
: ATTORNEY/AGENT INFORMATION:
: NAME: Pabst, Patrea L.
: REFERENCE/DOCKET NUMBER: 31,284
: STANDARDS:
: TOP-LOG: LINEAR

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## TELECOMMUNICATION INFORMATION:

TELEPHONE: 404-873-8794

TELEFAX: 404-873-8795

INSTRUMENT: 404-873-8796

SEQUENCE CHARACTERISTICS:

LENGTH: 412 amino acids

TYPE: amino acid

TOPOLOGY: single

MOLECULE TYPE: protein

ORIGINAL SOURCE:

ORGANISM: Homo sapiens

US-08-974-931-4

Query Match

Best Local Similarity 30.7%, Score 617; DB 4; Length 412;

Matches 144; Conservative 76; Mismatches 153; Indels 30; Gaps 11;

Qy 4 IVLLGVAFSCVWIKPLQVWTKRSLG-KMKLNFLEKHPRLSQISFGSLTLP 62

Db 9 LAUCLLAAPASALVPLFNTSRHNSGVSDVLAQGP-VKYSQAVPATEGP 66

Qy 63 ---LRNMLVYVNGITGTGPQVQVDTGSSDIAYVSPF-CTM--PACSAPVRFQL 115

Db 67 IPEVKNHMDAYGEIGITGTHPCFTFTDGTSSNLAVYSICKLIDACMHRKNSD 126

Qy 116 GSGTFQFNKFTPTTGYGSSMKQFATAYVRI-----GDLVSTDPQGLSVVEY 164

Db 127 KSTTYVNGITGTGPQVQVDTGSSDIAYVSPF-CTM--PACSAPVRFQL 115

Qy 165 GLE--GRNTQVGLGNPNISFSCAIPFDNLKNGALISEPVAFYLSK--NQGSVVM 220

Db 187 GTTFIAKATGDLGNAPFISNNVLPVFNLMQVLDQKIFSTLSRDPDAQGGLM 246

Qy 221 PGVDQVHTYKGLMWTPLTEAGRHVHMDISMKRTYACSDGCEALVDTGSHIEGPR 280

Db 247 LGDTSKTYKAGSLTAVNTRANKVHVLDOVENASGTLCKECCALVDTGSHIEGPR 306

Qy 281 LVNMLHRLITRFP-FDSKTYVSCFATKYLPSITFINGIKYPMATARAFKDSRG--RC 336

Db 307 EYVELQALGNAPLTOGEMTFCERKYSTLALTLALGQGLKSPEDTLAVSQKRTLC 366

Qy 337 YSAFKENTV-RTSRETMILGDAFLRFTSVFQGNDRIGLARA 378

Db 367 LSGFNGNDPPSPALILGDTVIGRTVTDNRNNGVFAEA 409

RESULT 12

Sequence 12; Application us/08919096

Patent No. 638793

TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHETERIN

FILE REFERENCE: PF107D2

CURRENT FILING DATE: 1997-02-12

NUMBER OF SEQ ID NOS: 14

SOFTWARE: Patent In Ver. 2.1

SEQ ID NO 12

TYPE: PPT

ORGANISM: Homo sapiens

US-08-798-096-12

Query Match

Best Local Similarity 35.7%, Pred. No. 4.7e-58;

Matches 144; Conservative 76; Mismatches 153; Indels 30; Gaps 11;

Qy 4 IVLLGVAFSCVWIKPLQVWTKRSLG-KMKLNFLEKHPRLSQISFGSLTLP 62

Db 9 LAUCLLAAPASALVPLFNTSRHNSGVSDVLAQGP-VKYSQAVPATEGP 66

Qy 63 ---LRNMLVYVNGITGTGPQVQVDTGSSDIAYVSPF-CTM--PACSAPVRFQL 115

Db 67 IPEVKNHMDAYGEIGITGTHPCFTFTDGTSSNLAVYSICKLIDACMHRKNSD 126

Qy 116 GSGTFQFNKFTPTTGYGSSMKQFATAYVRI-----GDLVSTDPQGLSVVEY 164

Db 127 KSTTYVNGITGTGPQVQVDTGSSDIAYVSPF-CTM--PACSAPVRFQL 115

Qy 165 GLE--GRNTQVGLGNPNISFSCAIPFDNLKNGALISEPVAFYLSK--NQGSVVM 220

Db 187 GTTFIAKATGDLGNAPFISNNVLPVFNLMQVLDQKIFSTLSRDPDAQGGLM 246

Qy 221 PGVDQVHTYKGLMWTPLTEAGRHVHMDISMKRTYACSDGCEALVDTGSHIEGPR 280

Db 247 LGDTSKTYKAGSLTAVNTRANKVHVLDOVENASGTLCKECCALVDTGSHIEGPR 306

Qy 281 LVNMLHRLITRFP-FDSKTYVSCFATKYLPSITFINGIKYPMATARAFKDSRG--RC 336

Db 307 EYVELQALGNAPLTOGEMTFCERKYSTLALTLALGQGLKSPEDTLAVSQKRTLC 366

Qy 337 YSAFKENTV-RTSRETMILGDAFLRFTSVFQGNDRIGLARA 378

Db 367 LSGFNGNDPPSPALILGDTVIGRTVTDNRNNGVFAEA 409

RESULT 12

Sequence 12; Application us/08919096

Patent No. 638793

TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHETERIN

FILE REFERENCE: PF107D2

CURRENT FILING DATE: 1997-02-12

NUMBER OF SEQ ID NOS: 14

SOFTWARE: Patent In Ver. 2.1

SEQ ID NO 12

TYPE: PPT

ORGANISM: Homo sapiens

US-08-915-095A-12

Query Match

Best Local Similarity 30.7%, Score 617; DB 4; Length 412;

Matches 144; Conservative 76; Mismatches 153; Indels 30; Gaps 11;

Qy 4 IVLLGVAFSCVWIKPLQVWTKRSLG-KMKLNFLEKHPRLSQISFGSLTLP 62

Db 9 LAUCLLAAPASALVPLFNTSRHNSGVSDVLAQGP-VKYSQAVPATEGP 66

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Db 367 LSGFMCMCPFPSPGLTADGVIGRTVYVFDNRNHRVFAEA 409
RESULT 13
US-08-798-095a-12
; Sequence 12, Application US/08798095a
; Best Local Similarity 30.7%, Score 617, DB 4, Length 412;
; Mismatches 144; Conservative 76; Mismatches 151; Indels 30; Gaps 11;
; GENERAL INFORMATION:
; APPLICANT: Hastligns, et al.
; TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHEPSIN
; APPLICANT ADDRESS: 2800 One Atlantic Center, 1201 W. Peachtree
; STREET, St. Louis, MO 63103
; COUNTRY: USA
; NUMBER OF SEQ ID NOS: 14
; CURRENT FILING DATE: 1997-02-12
; NUMBER OF SEQ ID NOS: 14
; SEQ ID NO 12 Patent Ver. 2.1
; LENGTH: 412
; TYPE: PRT Homo sapiens
US-08-798-095a-12
Query Match 30.7%, Score 617, DB 4, Length 412;
Best Local Similarity 35.7%, Score 674, DB 4, Length 412;
Matches 144; Conservative 76; Mismatches 151; Indels 30; Gaps 11;
Qy 4 IVGLGVAFSCVKEIPRLQVMTKRLTSG-NMKLNKLNKLPHEVLSQIFSGSNLTHP 62
Db 9 LALCILLAASAPALVRIPLKRTSIRTSNRSVSGSVDELJANGP-VKSYQDAVATGP 66
Qy 63 -----LNNMLNVLVGNITGCTPQFQVYVFDGSSDLWPSF-CYM-PACSAVFEQL 115
Db 67 IPEVLYANQVQVIGTCTPQCTPQVYVFDGSSNLWVLSKLLDLACHIKHNSD 126
Qy 116 QSTFPTNKTFTTGGSGKNGFLATDVRI-----GDLVSTDQPPULSVET 164
Db 127 KSTSYVNGTSTVINGSSLSGLYLSQTVSVPCQSNASALGVGVVETVETAKQP 186
Qy 165 GLE-CGRYDVGIVGIANPISGSAIPIDFNKMGALSPVATYLSK-NKGGSVYM 220
Db 187 CITYFAKGTQGLDAPVTRISNVYVFDNLKQLKQVNTSTLSKDPDQGGELM 246
Qy 221 FGVDYDQTKGELNMLPIEAGERNVHIDRSKRVYIACSDCALVHTGSDIETGP 280
Db 247 LGGDSTNLSJLSTVITAKVQVHIDVYVTSAGELICGACATGDTGSLVAPVD 306
Qy 281 LVNNHRLIKTRP-FDSMHVSEFATYLSITFTINGIKYPMATVAFKDSG---RC 336
Db 307 ERYGKAGVPLQGEHVPKSVYSLPILALGKMGKSPEDPITLVSAGKRTLC 366
Qy 337 YSNKENTY-FTSRETWLGDALFLRVYVFDGNGRIGLARA 378
Db 367 LSGFMCMCPFPSPGLTADGVIGRTVYVFDNRNHRVFAEA 409
RESULT 14 691.3
US-09-705-448-10
; Sequence 3, Application US/0874691
; Patent No. 6225103
; GENERAL INFORMATION:
; APPLICANT: Boeisch, Gerald
; APPLICANT ADDRESS: 10000 E. 12th Ave., Suite 100
; APPLICANT: Tang, Jordan
; TITLE OF INVENTION: Cloning and Characterization of Nepsin
; NUMBER OF SEQ ID NOS: 14
; CURRENT FILING DATE: 1997-02-12
; ADDRESS: Patricia L. Babst
; STREET: 2800 One Atlantic Center, 1201 W. Peachtree
; STREET, St. Louis, MO 63103
; COUNTRY: USA
; STATE: CA
; CITY: Santa Monica
; ZIP: 30109-3450
; COMPUTER READABLE FORM:

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; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; SOFTWARE: Sequencer, Sequencer Plus, Sequencer POS
; BEST LOCAL SIMILARITY 30.8%, Score 598, DB 4, Length 419;
; Mismatches 138; Conservative 80; Mismatches 146; Indels 32; Gaps 13;
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/974, 691
; FILING DATE: 09-MAY-1997
; CLASSIFICATION: C02F 1/00, B01D 1/00
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/031,196
; FILING DATE: 09-MAY-1997
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/046,126
; FILING DATE: 09-MAY-1997
; APPLICANT ADDRESS:
; NAME: Pabst, Patricia L.
; REGISTRATION NUMBER: 31,284
; REFERENCE/POCKET NUMBER: OMRF 166
; TELEPHONE: 404-873-8794
; TELEFAX: 404-873-8795
; INFORMATION FOR SEQ ID NO: 3:
; SOURCE: Human
; LENGTH: 419 amino acids
; TYPE: amino acid
; STRANDNESS: single
; MOLECULE TYPE: Protein
US-08-794-691-3
Query Match 30.8%, Score 598, DB 4, Length 419;
Best Local Similarity 34.8%, Score 556, DB 4, Length 419;
Matches 138; Conservative 80; Mismatches 146; Indels 32; Gaps 13;
Qy 5 VILGLGVAFSCVKEIPRLQVMTKRLTSG-NMKLNKLNKLPHEVLSQIFSGSNLTHP 63
Db 11 LLLGLLEPEAKLIPVLRHUGHRLI--NPLNGLN-BQLALSRSTSGNPSFVPL 65
Qy 64 NNKLVYVNGITGTPQFQVYVFDGSSDLWPSF-CYM-PACSAVFEQL 115
Db 66 SKHMTQVFTIGLTPPQVYVFDGSSDLWPSF-CYM-PACSAVFEQL 120
Qy 116 QSTFPTNKTFTTGGSGKNGFLATDVRI-----GDLVSTDQPPULSVET 173
Db 121 ASSEFNGPFTALQCTGSLGSLSDNLTGGHDVFTVGLALMEPLSLFALHFDG 180
Qy 174 VLLNVLNMFSSGSAIPIDFNKMGALSPVATYLSKNN-KGGSVYM 220
Db 181 TUGLGPFLANGVQVPLDAMVQGLERVPFSLFNGDSGDELGLSGDPHATVP 240
Qy 232 ELNMTPLIAGCGRVHIDRSKRVYIACSDCALVHTGSDIETGP 291
Db 241 PLMTPLIAGCGRVHIDRSKRVYIACSDCALVHTGSDIETGP 300
Qy 292 RPT-DSKHYVSCATKYLSTFTINGIKYPMATVAFKDSG---RC 346
Db 301 VPLANGQVFTQCKRPTLPVPSFHLGWNVLNGQVYVFDGNGRIGLARA 378
Qy 347 TSEMTLIGDANLRYVFDGNGRIGLARA 396
Db 361 PACPLMLGLDVLGTPVYVFDGNGRIGLARA 396
RESULT 15
US-09-705-448-10
; Sequence 10, Application US/09705448
; Patent No. 6432890
; GENERAL INFORMATION:
; APPLICANT: Xu, Hong
; APPLICANT: Bruno, Sandra A.
; APPLICANT: Elenboss, Laura A.
; APPLICANT: Fogliano, Michael
; APPLICANT: Goman, Victoria L.

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: APPLICANT: Bandman, Olga
: TITLE OF INVENTION: HUMAN ASPARTIC PROTEASES
: FILE REFERENCE: PR-0458-1 CIP
: CURRENT PUBLICATION NUMBER: US/09/705,448
: CURRENT FILING DATE: 2000-11-02
: PRIOR APPLICATION NUMBER: 09/116,641
: PRIOR FILING DATE: 1998-07-16
: PRIOR APPLICATION NUMBER: 09/008,271
: PRIOR FILING DATE: 1998-01-16
: NUMBER OF SEQ ID NOS: 10
: SOFTWARE: FastSeq for Windows Version 3.0
: SEQ ID NO: 10
: SEQ LENGTH: 419
: TYPE: PRT
: ORGANISM: MUS MUSCULUS
: PATHWAY:
: OTHER INFORMATION: 1906810, GenBank
US-09-705-448-10

Query Match      29 64; Score 594; Db 4; Length 419;
Best Local Similarity 3189;1;
Matches 138; Conservative 78; Mismatches 148; Indels 32; Gaps 13;

QY 5 VLGLVASEC-IVVILQVQVTKTILSGNKLKMFLEKPYRLSQISFGSKLTHPL 63
Db 11 LLGLNLEPEAKLIVFLQRLHRLHRL--NPLNGN--EQALSLSTSGNPFYPL 65
QY 64 RNINLVYVNIETGEPQGVVVFQSGSLAVPS---TCHMPACSPWFRQ---L 115
Db 66 SKFMNQTQFTIGLQTFPQNTFYVPTGSSNLWVPSRCHFFSL-AC---NHHRENEK 120
QY 116 QGSTQPPKPKFTTIGGSSWKGELAYTVIQLDLSVDFQFGLSVYVGL--EGHVDG 173
Db 121 ASSSFRPMTGKFAIQGTGSLISQDLNLTIGGIDHAYTFGEALPESLIFALHFDG 180
QY 174 VLGLNPLHPSGCAPIFDMLAKQGLISPYATYLSKNQ--ESVWVGQVQHYTKG 231
Db 181 LLGLGFTPLAVGQVPPDANVFDGLLEKPYRFTYFLNKGSGDGLVGGSDPARYP 240
QY 232 ELKNIPLKAGCNVWQKRSMTKTVIACSDGCPALVHTQTSIEGPGKLVNNHRLRT 291
Db 241 PLTFITPTPAVQVWMSKVGKGLSLAQCCSAILQTSLTIGTSEEIALNKLGG 300
QY 292 RPF-DKSNVYSKATKPLDSITFLINGIKYPMATAYIFN---DSGRCTSAFKNV-R 346
Db 301 YPLKNGQYFIQCKTPTLPVSEFLGQVFNLTQDYVTKLQSDGLCLLGFQALDIPK 360
QY 347 TSRTWILQGNLAKNYSVFQGN---DRIGLARA 378
Db 361 PAGPLMLIGLVLPYAVFQGRKNGKRVGLARA 396

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Search completed: April 2, 2003, 17:50:47  
Job time : 31 secs





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Db 185 TVEVWVTVDSITWNGEALACACACQAVTVGTSLTGGTSPANTQSGDASGNSGSD 244
QY 298 HYVSCATKPLPSITFIINGIKETPMATTAAYIFKDSRGYSKAFKENVPT-SREWTLGD 356
Db 245 WYSCASLSSLPDLPVFTINVOVVPVSATILQ-SBSCISGQGNMPLTSESGMILLGD 303
QY 357 ATATRTYSVDFGNGRIGLA 376
Db 304 VFIRKQFTVFDRAANNQVGLA 323
Db 304 VFIRKQFTVFDRAANNQVGLA 323

RESULT 5
US-09-845-226-31
; Sequence 31, Application US/09845226
; Patent No. US672011560A1
; GENERAL INFORMATION :
; APPLICANT: Tong, Jordan J.N.
; APPLICANT: Hong, Lin K.
; APPLICANT: Wang, Aron K.
; TITLE OF INVENTION: Bititors of Memapsin 2 and Use Thereof
; FILE REFERENCE: OMRF 182
; CURRENT APPLICATION NUMBER: US/09/845,226
; PRIOR APPLICATION NUMBER: 60/168,060
; PRIOR FILING DATE: 2000-06-27
; PRIOR APPLICATION NUMBER: 60/177,836
; PRIOR FILING DATE: 1999-11-30
; PRIOR APPLICATION NUMBER: 60/178,368
; PRIOR FILING DATE: 2000-01-25
; PRIOR APPLICATION NUMBER: 60/210,292
; PRIOR FILING DATE: 2000-06-08
; NUMBER OF SEQ ID NOS: 31
; SOFTWARE: PatSeq for Windows Version 3.0
; SEQ ID NO 31: PatentIn Ver. 2.1
; LENGTH: 326
; TYPE: PRT
; ORGANISM: Homo sapiens
; PEPPER:
; OTHER INFORMATION: Amino acids 2-5, 6-9, 13-20, 25-32, 65-67, 69-74,
; OTHER INFORMATION: 79-87, 89-91, 99-106, 119-122, 150-154, 164-167,
; OTHER INFORMATION: 201-203, 205-209, 209-212, 210-214, Beta Strands
; OTHER INFORMATION: 231-234, 258-265, 269-272, 273-276, 280-283, 285-288, 288-301, 310-315,
; OTHER INFORMATION: Amino acids 281-284, 286-288, 298-301, 310-315,
; OTHER INFORMATION: and 319-324 are Beta strands
; OTHER INFORMATION: 340-342, 351-353, 354-356, 361-366, 371-373, 375-377, 381-384, 386-389, 391-393, 395-398, 401-403, 405-408, 410-413, 415-418, 420-423, 425-428, 430-433, 435-438, 440-443, 445-448, 450-453, 455-458, 460-463, 465-468, 470-473, 475-478, 480-483, 485-488, 490-493, 495-498, 500-503, 505-508, 510-513, 515-518, 520-523, 525-528, 530-533, 535-538, 540-543, 545-548, 550-553, 555-558, 560-563, 565-568, 570-573, 575-578, 580-583, 585-588, 590-593, 595-598, 600-603, 605-608, 610-613, 615-618, 620-623, 625-628, 630-633, 635-638, 640-643, 645-648, 650-653, 655-658, 660-663, 665-668, 670-673, 675-678, 680-683, 685-688, 690-693, 695-698, 700-703, 705-708, 710-713, 715-718, 720-723, 725-728, 730-733, 735-738, 740-743, 745-748, 750-753, 755-758, 760-763, 765-768, 770-773, 775-778, 780-783, 785-788, 790-793, 795-798, 800-803, 805-808, 810-813, 815-818, 820-823, 825-828, 830-833, 835-838, 840-843, 845-848, 850-853, 855-858, 860-863, 865-868, 870-873, 875-878, 880-883, 885-888, 890-893, 895-898, 900-903, 905-908, 910-913, 915-918, 920-923, 925-928, 930-933, 935-938, 940-943, 945-948, 950-953, 955-958, 960-963, 965-968, 970-973, 975-978, 980-983, 985-988, 990-993, 995-998, 1000-1003, 1005-1008, 1010-1013, 1015-1018, 1020-1023, 1025-1028, 1030-1033, 1035-1038, 1040-1043, 1045-1048, 1050-1053, 1055-1058, 1060-1063, 1065-1068, 1070-1073, 1075-1078, 1080-1083, 1085-1088, 1090-1093, 1095-1098, 1100-1103, 1105-1108, 1110-1113, 1115-1118, 1120-1123, 1125-1128, 1130-1133, 1135-1138, 1140-1143, 1145-1148, 1150-1153, 1155-1158, 1160-1163, 1165-1168, 1170-1173, 1175-1178, 1180-1183, 1185-1188, 1190-1193, 1195-1198, 1200-1203, 1205-1208, 1210-1213, 1215-1218, 1220-1223, 1225-1228, 1230-1233, 1235-1238, 1240-1243, 1245-1248, 1250-1253, 1255-1258, 1260-1263, 1265-1268, 1270-1273, 1275-1278, 1280-1283, 1285-1288, 1290-1293, 1295-1298, 1300-1303, 1305-1308, 1310-1313, 1315-1318, 1320-1323, 1325-1328, 1330-1333, 1335-1338, 1340-1343, 1345-1348, 1350-1353, 1355-1358, 1360-1363, 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1 PRIOR APPLICATION NUMBER: 09/219,441  
 2 PRIOR FILING DATE: 1998-12-23  
 3 NUMBER OF SEQ ID NOS: 14  
 4 SOFTWARE: PatentIn Ver. 2.1  
 5 SEQ ID NO: 1  
 6 LENGTH: 396  
 7 TYPE: PRT  
 8 ORGANISM: Homo sapiens  
 9 US-09-251,936-13

Query Match 38.5%; Score 772.5; DB 10; Length 396;  
 Best Local Similarity 39.8%; Pred. No. 5,1e-67;  
 Matches 135; Conservative 72; Mismatches 147; Indels 15; Gaps 7;

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 QY 60 IPIRLINMLNVVGNITITGPQGFQVFGSSGLVPS-FCYMPACAPWVFLQSS 118  
 DB 67 KEPLINTLMNEYFOTISIGSPONTVFTFTGSSNKLNVPSYVTSNFGAGSELFOYDINSRFPQS 126  
 QY 119 TFOPTKPTFTTIGSGSKRGKGLATDVRIGDVLSTQDPQLSVGVG--LEGRTWGLG 176  
 DB 127 TFSQPGQSSLVNPFVTSIGSPONTVFTFTGSSNKLNVPSYVTSNFGAGSELFOYDINSRFPQS 186  
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 DB 187 LQYLSLVAGGVTFVFNMAQNLVPLNFWFSYVTSNFGAGSELFOYDINSRFPQS 246  
 QY 235 WPLIENGKRVIMRINSKRTVACSDCCALVFGTSHTEGRLVWVHRLITRFP 294  
 DB 247 WYPTKQALWQALJNVQGVTFWFCSECCQAVTGTSLTTPGSIKYQLQNALGAAPV 306  
 QY 295 DSKHYVSCFATKYLPTFTINGIKYTPWABVY---FKSGRGVCAKENTVYR-TSRSE 350  
 DB 307 DQETVELANLWVDTFTLNGVPTFTLSPTATLLDPSQKQCSQGFQILDHPPAGP 366  
 QY 351 TWLGDALRRTSVFGRDNRIGLAVP 379  
 DB 367 LWLGDVTFIRQTSVFGDRNVRGLAVP 395

RESULT 7  
 1 US-09-470-954A-48

1 Sequence 13, Application US/1011464  
 2 Patent No. US20020142448A1  
 3 GENERAL INFORMATION:  
 4 TITLE OF INVENTION: HUMAN OSTEOCLAST-DERIVED CATHREPSIN  
 5 FILE REFERENCE: PFI0705  
 6 CURRENT APPLICATION NUMBER: US/10114,464  
 7 PRIOR APPLICATION NUMBER: 09/553,125  
 8 PRIOR FILING DATE: 1995-11-07  
 9 PRIOR APPLICATION NUMBER: 09/208,007  
 10 NUMBER OF SEQ ID NOS: 14  
 11 SOFTWARE: PatentIn Ver. 2.1  
 12 SEQ ID NO 13  
 13 LENGTH: 396  
 14 TYPE: PRT  
 15 ORGANISM: Homo sapiens  
 16 US-10-114-464-13

Query Match 38.5%; Score 772.5; DB 12; Length 396;  
 Best Local Similarity 39.8%; Pred. No. 5,1e-67;  
 Matches 135; Conservative 72; Mismatches 147; Indels 15; Gaps 7;

QY 4 IVLGLGVNSECIVKPIKLVQVWTKRLTSKGNKLNFKLEHPEYLSQISFRGS---NLT 59  
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QY 60 IPIRLINMLNVVGNITITGPQGFQVFGSSGLVPS-FCYMPACAPWVFLQSS 118  
 DB 67 KEPLINTLMNEYFOTISIGSPONTVFTFTGSSNKLNVPSYVTSNFGAGSELFOYDINSRFPQS 126  
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 DB 127 TFSQPGQSSLVNPFVTSIGSPONTVFTFTGSSNKLNVPSYVTSNFGAGSELFOYDINSRFPQS 186  
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 DB 187 LQYLSLVAGGVTFVFNMAQNLVPLNFWFSYVTSNFGAGSELFOYDINSRFPQS 246  
 QY 235 WPLIENGKRVIMRINSKRTVACSDCCALVFGTSHTEGRLVWVHRLITRFP 294  
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 QY 295 DSKHYVSCFATKYLPTFTINGIKYTPWABVY---FKSGRGVCAKENTVYR-TSRSE 350  
 DB 307 DQETVELANLWVDTFTLNGVPTFTLSPTATLLDPSQKQCSQGFQILDHPPAGP 366  
 QY 351 TWLGDALRRTSVFGRDNRIGLAVP 379  
 DB 367 LWLGDVTFIRQTSVFGDRNVRGLAVP 395

RESULT 8  
 1 US-09-470-954A-48

1 Sequence 48, Application US/09470954A  
 2 Patent No. US20020142448A1  
 3 GENERAL INFORMATION:  
 4 APPLICANT: Cacer, Matthew R.  
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Query Match 34.2%; Score 686.5; DB 9; Length 388;  
 Best Local Similarity 37.9%; Pred. No. 1,2e-58;  
 Matches 149; Conservative 81; Mismatches 142; Indels 21; Gaps 12;

QY 1 KWR--IVLGLGVNSECIVKPIKLVQVWTKRLTSKGNKLNFKLEHPEYLSQISFRGS 57  
 DB 1 KWR--IVLGLGVNSECIVKPIKLVQVWTKRLTSKGNKLNFKLEHPEYLSQISFRGS 60  
 QY 58 IPIRLINMLNVVGNITITGPQGFQVFGSSGLVPS-FCYMPACAPWVFLQSS 116  
 DB 61 VTEPMA-YMDAFTGSEISGTPFNFVTFDGSNKLNVPSYVTSNFGAGSELFOYDINSRFPQS 119  
 QY 117 SSTQPTKPTFTTIGSGSKRGKGLATDVRIGDVLSTQDPQLSVGVG--LEGRTWGLG 174  
 DB 120 SSTQPTKPTFTTIGSGSKRGKGLATDVRIGDVLSTQDPQLSVGVG--LEGRTWGLG 179  
 QY 175 LQYLSLVAGGVTFVFNMAQNLVPLNFWFSYVTSNFGAGSELFOYDINSRFPQS 233  
 DB 180 LQYLSLVAGGVTFVFNMAQNLVPLNFWFSYVTSNFGAGSELFOYDINSRFPQS 239  
 QY 234 WYPTKQALWQALJNVQGVTFWFCSECCQAVTGTSLTTPGSIKYQLQNALGAAPV 292  
 DB 240 WYPTKQALWQALJNVQGVTFWFCSECCQAVTGTSLTTPGSIKYQLQNALGAAPV 296



Qy 293 PDSKHY---VSCATKPLSTPLINGIYMTARATIKFOSRGVSAKFNKTVRS 348  
 Db 297 GAQEDYQGLVKNCSJONPLSTPLINGVFLPPSSYILSN--GYC-TWGVPTYLSS 354  
 Qy 349 RE---TWIGQATFLARYSVFSDNDRIGLARA 378  
 Db 355 QNGQPMILIGDVFASVSYDLGNRVGFATA 387

RESULT 9  
 US-09-215-450-24  
 : Sequence 24, Application US/0215450  
 : Patent No. US20020062728A1  
 : GENERAL INFORMATION: 81; Mismatches 142; Indels 21; Gaps 12;  
 : APPLICANT: Gliese, Klaus  
 : TITLE OF INVENTION: METASTATIC BREAST AND COLON CANCER REGULATED GENES  
 : FILE REFERENCE: 1451.100 / 21030.447  
 : CURRENT APPLICATION NUMBER: US/09/215,450  
 : CURRENT FILING DATE: 1998-12-17  
 : SOFTWARE: FastSeq for Windows Version 3.0  
 : SEQ ID NO 24  
 : LENGTH: 388  
 : ORGANISM: Homo sapiens  
 : US-09-215-450-24

Query Match 34.2%, Score 686.5, DB 10; Length 388;  
 Best Local Similarity 37.7%, Pred. No. 7, 3e-32;  
 Matches 149; Conservative 81; Mismatches 142; Indels 21; Gaps 12;  
 Qy 1 MKNV---LVILGVAFSCVIVLQVQVTRVLSKNNKLNKLEHLYLS-QISPRSN 57  
 Db 1 MKNVYVLCVLQLEAAVYVLFKFSRTWKEGLGFRTHTDPANKYRGLS 60  
 Qy 58 LITURPLANKLVNKHVYATGHPQVQVYVQVSGVAVVRS--FTVNPACSAVNFQQL 116  
 Db 61 VTEPMA---YDAAYAFGLSLTGPPNPLVLFDTSSNLVAVSYVQQAQTSISRNPS 119  
 Qy 117 SSTQPTNFTVITVSSSKKGLFAYVTLGDAVSTQVQVGLSVNGLC--GRNDOY 174  
 Db 120 SSTVSTNGSTQVTLGSGGSLDFPGCTVTVQVQVQVGLSENPETNVTAFGDI 179  
 Qy 175 GILVNLNFSGGLIDFONKAGLSSEVAPVPLSKN--QVSPWQSGVQSSGLY 233  
 Db 180 MGLATVLSQVETATMGQVQVQVGLATSVFVLSNQGSGGAVYVQVSLTQI 239  
 Qy 234 MNTLLGLNKHVHNPISKMETVIA--CGCCDALVYVQVSELPQVKNILNTR 292  
 Db 240 YVAPVTFQVYKIEEFLGQAGSCSECCQAVDTGTSLLVPTQMS---ALLQAT 296  
 Qy 293 PDSKHY---VSCATKPLSTPLINGIYMTARATIKFOSRGVSAKFNKTVRS 348  
 Db 297 GAQEDYQGLVKNCSJONPLSTPLINGVFLPPSSYILSN--GYC-TWGVPTYLSS 354  
 Qy 349 RE---TWIGQATFLARYSVFSDNDRIGLARA 378  
 Db 355 QNGQPMILIGDVFASVSYDLGNRVGFATA 387

RESULT 10  
 US-09-215-450-25  
 : Sequence 25, Application US/09215450  
 : Patent No. US20020062728A1  
 : GENERAL INFORMATION: 76; Mismatches 153; Indels 30; Gaps 11;  
 : APPLICANT: Gliese, Klaus  
 : TITLE OF INVENTION: METASTATIC BREAST AND COLON CANCER REGULATED GENES  
 : FILE REFERENCE: 1451.100 / 21030.447  
 : CURRENT APPLICATION NUMBER: US/09/215,450  
 : CURRENT FILING DATE: 1998-12-17  
 : SOFTWARE: FastSeq for Windows Version 3.0  
 : SEQ ID NO 25  
 : LENGTH: 388  
 : ORGANISM: Homo sapiens  
 : US-09-215-450-25

Query Match 30.7%, Score 617, DB 10; Length 412;  
 Best Local Similarity 35.7%, Pred. No. 7, 3e-32;  
 Matches 144; Conservative 76; Mismatches 153; Indels 30; Gaps 11;  
 Qy 4 LVILGVAFSCVIVLQVQVTRVLSKNNKLNKLEHLYLSQISPRSNLTHP 62  
 Db 9 LAUCLLAAPASALVPLUKTSTIRHVSQSVGLLNGP--VNSVQVNPATPEP 66  
 Qy 63 ---LRTNMLVYVQVITGTPPQVQVQVDTSSDVAWPSF--CTM--PACSAVNFQQL 115  
 Db 67 PDSKHY---VSCATKPLSTPLINGIYMTARATIKFOSRGVSAKFNKTVRS 164  
 Qy 116 QSTQPTNFTVITVSSSKKGLFAYVTLGDAVSTQVQVGLSVNGLC--GRNDOY 179  
 Db 127 SSTVSTNGSTQVTLGSGGSLDFPGCTVTVQVQVQVGLSENPETNVTAFGDI 186  
 Qy 165 GLE--GRNDOYGLNPLNPSISGALPFDONKAGLSBPVFAFLSK--NQBSISYVM 220  
 Db 187 GTTFAAGFQVGLQKATPSTVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQV 246  
 Qy 221 FQGVQV 280  
 Db 247 GQSTQV 306  
 Qy 281 LVNHLILHITRP--FDSKHVYSAFKATPLSTPLINGIYMTARATIKFOSK--RC 336  
 Db 307 FVRLQALNCAVPLTOGETHRTGKFNSTVPLATLQAGVQVQVQVQVQVQVQV 366  
 Qy 337 YSAFKNVY--RTSRETHIGDAFLRRVSVFSDNDRIGLARA 378  
 Db 367 LSQV 409

RESULT 11  
 US-09-953-956-12  
 : Sequence 12, Application US/09953956  
 : Patent No. US20020072107A1  
 : GENERAL INFORMATION: 76; Mismatches 153; Indels 30; Gaps 11;  
 : APPLICANT: BRACON, et al  
 : TITLE OF INVENTION: HUMAN ESTROCLAST-DERIVED CATHESPIN  
 : FILE REFERENCE: PF107D201  
 : CURRENT APPLICATION NUMBER: US/09/953,956  
 : CURRENT FILING DATE: 2001-09-18  
 : PRIOR APPLICATION NUMBER: 09/219,441  
 : PRIOR FILING DATE: 1998-12-23  
 : NUMBER OF SEQ ID NOS: 14  
 : SOFTWARE: FASTA v2.0.1  
 : SEQ ID NO 12  
 : LENGTH: 412  
 : TYPE: PRT  
 : ORGANISM: Homo sapiens  
 : US-09-953-956-12

Query Match 30.7%, Score 617, DB 10; Length 412;  
 Best Local Similarity 35.7%, Pred. No. 7, 3e-32;  
 Matches 144; Conservative 76; Mismatches 153; Indels 30; Gaps 11;  
 Qy 4 LVILGVAFSCVIVLQVQVTRVLSKNNKLNKLEHLYLSQISPRSNLTHP 62  
 Db 9 LAUCLLAAPASALVPLUKTSTIRHVSQSVGLLNGP--VNSVQVNPATPEP 66  
 Qy 63 ---LRTNMLVYVQVITGTPPQVQVQVDTSSDVAWPSF--CTM--PACSAVNFQQL 115  
 Db 67 PDSKHY---VSCATKPLSTPLINGIYMTARATIKFOSRGVSAKFNKTVRS 164  
 Qy 116 QSTQPTNFTVITVSSSKKGLFAYVTLGDAVSTQVQVGLSVNGLC--GRNDOY 179



LENGTH: 433  
 TYPE: PRT  
 US-09-264-895-11

ORGANISM: Homo Sapien

Best Local 136, Conservative

28.64, Score 574.5; DB 9; Length 413;

Similarity 34.94, Pred. No. 11e-477;

Matches 136, Conservative

155, Indels 31; Gaps

12;

Query Match

6 LGIATVATSECTVPLKRVQVTKTKTSGNKKLNKFNKHYLSQIS--FRGSRTHPL 63

29 LIAVNSGATCLIFPENNQGRRL--NLQGR--RFAFLPLGAPSPQDFPVL 83

64 RHINMNVVGGITGTTFQFQVDTGSSDLVPSCTMPAC--SAPVW---FRQLQ 116

84 SNVQVDTGELGATTFQNFYDTGSSNLVPS---RKHGFVS-CLHRTDPA 139

117 SSTQVTKNTFTTYSGGSGMKFLAVTVRLGVLTQDFQSVFVGL--EGRNDGV 174

140 SSSPQNGKTAQTGTVGQGLISDNTGGTQKASVYFGRAHPSVFAFRAEGL 199

175 LGLVFNISFAIPFDENKQALSEPFVATLSKNOE--GSYMGVGDVQYKGE 232

200 LGAPFLVSYGVYPMVAVFQGLLQNVPSFLANDPDEPQGLVAGSDVHPIPP 259

233 LAMPIPLIAGMVDNRISMRKYIACSDGCLAVHTQSHIGPGLVNNHRLTR 292

260 LITVTPVPAWQIEMVAVGQVLTKACQALCLGTLQPTFETALAAAGGL 319

293 PDSKSY-VSCFATYLPSTTFLNGIKYKARAYIFKDSRG--RCYSNFKNY-RT 347

320 PLLGSHITLHSEIPLAFNSLGLGVNANNDVYVATNGVYRLCSGLDLPVPP 379

348 SREMTLGDALRVFSVDGRG---NDRICLARA 378

380 ACPMLLDGTVTAVTAVDNDKSSANGLARA 414

REMARK 15

US-09-215-450-26

Sequence 26, Application US/09215450

Patent No. US20020068278A1

GENERAL INFORMATION:

APPLICANT: Xln, Hong

TITLE OF INVENTION: METASTATIC BREAST AND COLON CANCER REGULATED GENES

FILE REFERENCE: 1451.100 / 210030.447

CURRENT FILING DATE: 1998-12-17

NUMBER OF SEQ ID NOS: 27

SOFTWARE: FastSeq for Windows Version 3.0

SEQUENCE ID NOS:

LENGTH: 406

TYPE: PRT

ORGANISM: Homo sapien

US-09-215-450-26

Query Match

Best Local Similarity 33.18; Pred. No. 9e-45;

Matches 136, Conservative

79; Hammetches 146; Indels 48; Gaps

14;

2 KNVLVLGVAFSCVKEPLRVQVTKTKTSGNKKLNKFNKHYLSQIS----- 52

9 RMLGL--LLAGMSCTGELPDTTTRFLKARMSRESLKGVDMAHGLQFNSQPMK 66

53 -FRGSRTHPLKRNKLVNVTGTPQDFQVQVFGSSDLVPSF-CT--MFACSA 108

67 LTLGVTSYLVNTMDYQTEIGLTGPQTKVDTGSSNANVWFSKRLTACY 126

109 PWFQGLSGSTQFTNTFTTYSGGSGMKFLAVTVRLGVLTQDFQV---LSVVEY 164

127 HKLDANSSSTKMGTELKATYGVYSGLSQDITVGGITV-OMQVETEMALPFP 185

QY 165 GLEGVNTGVLGNTPLNISFSGAIPFDENKQALSEPFVATLSKNOE--GSYVM 220  
 DB 186 NL--AEFDVQVGMGTQIQAIGRVTFPFDNTISQVYKDFVFTYNDSEMSGLGGVY 243  
 QY 221 TGVQVDTQYKGLNMLIELANGRVRHVRISMRKYIACSDGCLAVHTQSHIGPGR 280  
 DB 244 LGQSDPQHTENFTMLTKYQWQJQMGVSGVSGSLCEGCLAVDTASTYISGS-- 301  
 QY 281 LWNHRLI-----RTRPDSKNVSCFATYLPSTTFLNGIKYKARAYIFKDSRG 335  
 DB 302 -TSSLEKMLAGAKKALPD--FYVCKRSGPTPLPSFLGSKETLTSDQVYQES--- 355  
 QY 336 CTSAPKENTYR-----TSBETMLGDALRVFSVDGRNDICLARA 378  
 DB 356 -YSSKCLCTLAHMDIPPTGPTMALATATFKRTYTFDRNNHIGFALA 405

Search completed: April 2, 2003, 17:48:36

Job time : 20 secs

Pending Nucleic Acid and/or Pending Amino Acid database searches now generate two sets of results. These databases were split into two parts to reduce the time needed to update the databases daily. The split freed up more machine time for processing searches.

Searches run against the Nucleic Acid Pending database produce two sets of results, with the extensions, **.rnpm** and **.rnpn**

Searches run against the Amino Acid Pending database produce two sets of results, with the extensions, **.rapm** and **.rapn**

*The Pending database search results should not be left in the case because they contain data that is confidential.*



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Db 1 MKWVLLGVAFSECVIKPLQVTKMTLSCKNMLNKKEHPIYLSQISFGSNLTI 60
Qy 61 HPLNTWMLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Db 61 HPLNLMNLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Qy 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Db 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Qy 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Db 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Qy 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Db 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Qy 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360
Db 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360
Qy 361 RYFSVFDGNDRIGLARAY 379
Db 361 RYFSVFDGNDRIGLARAY 379

RESULT 2
US-09-791-537-75815
: Sequence 75815, Application US/0971537
: GENERAL INFORMATION:
: APPLICANT: Debe, Derek
: APPLICANT: Dauter, Joseph
: TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES OF PROTEIN FAMILIES AND FAMILY MEMBE
: FILE REFERENCE: 261,210
: CURRENT FILING DATE: US/09/791,537
: CURRENT FILING DATE: 2001-02-22
: SOFTWARE: Raptorin version 3.0
: SEQ ID NO 75815
: LENGTH: 379
: ORGANISM: Bos taurus
US-09-791-537-75815

Best Match
Query Match 100.0%; Score 2008; Db 21; Length 379;
Matches 379; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MKWVLLGVAFSECVIKPLQVTKMTLSCKNMLNKKEHPIYLSQISFGSNLTI 60
Db 1 MKWVLLGVAFSECVIKPLQVTKMTLSCKNMLNKKEHPIYLSQISFGSNLTI 60
Qy 61 HPLNLMNLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Db 61 HPLNLMNLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Qy 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Db 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Qy 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Db 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Qy 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Db 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Qy 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360
Db 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360

RESULT 3
US-60-106-188-32
: Sequence 32, Application US/60106188
: GENERAL INFORMATION:
: APPLICANT: R. Michael
: APPLICANT: Green, Jonathan
: APPLICANT: Xie, Saucel
: TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
: FILE REFERENCE:
: CURRENT FILING DATE: 1998-10-28
: CURRENT FILING DATE: 1998-10-28
: NUMBER OF SEQ ID NOS: 56
: SOFTWARE: Raptorin Ver. 2.0
: SEQ ID NO 32
: LENGTH: 379
: ORGANISM: Homo sapiens
US-60-106-188-32

Query Match 100.0%; Score 2008; Db 27; Length 379;
Matches 379; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MKWVLLGVAFSECVIKPLQVTKMTLSCKNMLNKKEHPIYLSQISFGSNLTI 60
Db 1 MKWVLLGVAFSECVIKPLQVTKMTLSCKNMLNKKEHPIYLSQISFGSNLTI 60
Qy 61 HPLNLMNLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Db 61 HPLNLMNLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Qy 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Db 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Qy 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Db 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Qy 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Db 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Qy 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360
Db 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360

RESULT 4
US-79-364-42
: Sequence 42, Application US/09273164
: GENERAL INFORMATION:
: APPLICANT: Roberts, R. Michael
: APPLICANT: Green, Jonathan
: APPLICANT: Xie, Saucel
: TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
: FILE REFERENCE: DWM003/UWM003P
: CURRENT FILING DATE: 1999-03-16
: CURRENT FILING DATE: 1999-03-16
: EARLIER APPLICATION NUMBER: 60/078,783
: EARLIER FILING DATE: 1998-03-20
: EARLIER APPLICATION NUMBER: 60/106,188

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Db 1 MKWVLLGVAFSECVIKPLQVTKMTLSCKNMLNKKEHPIYLSQISFGSNLTI 60
Qy 61 HPLNLMNLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Db 61 HPLNLMNLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Qy 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Db 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Qy 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Db 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Qy 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Db 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Qy 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360
Db 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360
Qy 361 RYFSVFDGNDRIGLARAY 379
Db 361 RYFSVFDGNDRIGLARAY 379

RESULT 2
US-09-791-537-75815
: Sequence 75815, Application US/0971537
: GENERAL INFORMATION:
: APPLICANT: Debe, Derek
: APPLICANT: Dauter, Joseph
: TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES OF PROTEIN FAMILIES AND FAMILY MEMBE
: FILE REFERENCE: 261,210
: CURRENT FILING DATE: US/09/791,537
: CURRENT FILING DATE: 2001-02-22
: SOFTWARE: Raptorin version 3.0
: SEQ ID NO 75815
: LENGTH: 379
: ORGANISM: Bos taurus
US-09-791-537-75815

Best Match
Query Match 100.0%; Score 2008; Db 21; Length 379;
Matches 379; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MKWVLLGVAFSECVIKPLQVTKMTLSCKNMLNKKEHPIYLSQISFGSNLTI 60
Db 1 MKWVLLGVAFSECVIKPLQVTKMTLSCKNMLNKKEHPIYLSQISFGSNLTI 60
Qy 61 HPLNLMNLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Db 61 HPLNLMNLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Qy 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Db 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Qy 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Db 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Qy 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Db 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Qy 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360
Db 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360

RESULT 3
US-60-106-188-32
: Sequence 32, Application US/60106188
: GENERAL INFORMATION:
: APPLICANT: R. Michael
: APPLICANT: Green, Jonathan
: APPLICANT: Xie, Saucel
: TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
: FILE REFERENCE:
: CURRENT FILING DATE: 1998-10-28
: CURRENT FILING DATE: 1998-10-28
: NUMBER OF SEQ ID NOS: 56
: SOFTWARE: Raptorin Ver. 2.0
: SEQ ID NO 32
: LENGTH: 379
: ORGANISM: Homo sapiens
US-60-106-188-32

Query Match 100.0%; Score 2008; Db 27; Length 379;
Matches 379; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MKWVLLGVAFSECVIKPLQVTKMTLSCKNMLNKKEHPIYLSQISFGSNLTI 60
Db 1 MKWVLLGVAFSECVIKPLQVTKMTLSCKNMLNKKEHPIYLSQISFGSNLTI 60
Qy 61 HPLNLMNLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Db 61 HPLNLMNLVYKNTITIGTPPEQVWFVFGSGGLVAFSECTHPCASAPMFRQLGSGTF 120
Qy 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Db 121 OPTNKKFTITGSGSKMGFLADYVHGLGVLSVDFQFGLSVYVEGLRNTDVLGNLP 180
Qy 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Db 181 NTSFGAIPFDMLKNGALISEPVFAFLSKNKGVSVMFGVGMVYKGEJLWPLIE 240
Qy 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Db 241 AGNRYVHMDISKMTYKATSDCCALVITGSHISGGLVNNHLLIRTFPDSKHY 300
Qy 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360
Db 301 SCPTATYPSITFINIKYPMFARATFDSGRCYSFSAKENTVYSHETWILGDAFLR 360

RESULT 4
US-79-364-42
: Sequence 42, Application US/09273164
: GENERAL INFORMATION:
: APPLICANT: Roberts, R. Michael
: APPLICANT: Green, Jonathan
: APPLICANT: Xie, Saucel
: TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
: FILE REFERENCE: DWM003/UWM003P
: CURRENT FILING DATE: 1999-03-16
: CURRENT FILING DATE: 1999-03-16
: EARLIER APPLICATION NUMBER: 60/078,783
: EARLIER FILING DATE: 1998-03-20
: EARLIER APPLICATION NUMBER: 60/106,188

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: EARLIER FILING DATE: 1998-10-28  
 : NUMBER OF SEQ ID NOS: 56  
 : SOFTWARE: Patent In Ver. 2.0  
 : LENGTH: 379  
 : TYPE: PRT  
 : ORGANISM: bovidae  
 US-09-273-164-42

Query Match 98.9%; Score 1983; Db 27; Length 379;  
 Best Local Similarity 98.7%; Pred. No. 2.7e-05;  
 Matches 374; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

Qy 1 MKWVLGVAFSECVIKPLQKQTKMTLSCKNMLANLKEHPIYLSQIFSGNSLII 60  
 Db 1 MKWVLGVAFSECVIKPLQKQTKMTLSCKNMLANLKEHPIYLSQIFSGNSLII 60  
 Qy 61 IPIRLNKLNVYGNITIGTPPOEVQVFTGSDGLVAFSCITMPACAPVWFQLOSTF 120  
 Db 61 IPIRLNKLNVYGNITIGTPPOEVQVFTGSDGLVAFSCITMPACAPVWFQLOSTF 120  
 Qy 121 OPTNKFTITTYGSSKMGFLATVTRIGDLVSTQDPGLSVYVEGLRGNTDOVGLNLP 180  
 Db 121 OPTNKFTITTYGSSKMGFLATVTRIGDLVSTQDPGLSVYVEGLRGNTDOVGLNLP 180  
 Qy 181 NISFSGAIPFDKLANQALISEPVAFYLSKNNQSGVYMGQVDRHYTKGLAMPLIE 240  
 Db 181 NISFSGAIPFDKLANQALISEPVAFYLSKNNQSGVYMGQVDRHYTKGLAMPLIE 240  
 Qy 241 ASGRYVMDIRSKMRTVACSGCEALVHTGSHIGDGLVNNHLLIRTPFDSKRY 300  
 Db 241 ASGRYVMDIRSKMRTVACSGCEALVHTGSHIGDGLVNNHLLIRTPFDSKRY 300  
 Qy 301 SCFATNLPSTPIFINGIKPYMTARAYIFGSRGCTYSAKFNTVYRSHETWILGDAFLR 360  
 Db 301 SCFATNLPSTPIFINGIKPYMTARAYIFGSRGCTYSAKFNTVYRSHETWILGDAFLR 360  
 Qy 361 RYFSVDFGNDRIGLARAY 379  
 Db 361 RYFSVDFGNDRIGLARAY 379

## RESULT 5

US-09-273-168-42

Sequence 42; Application US/60106188

GENERAL INFORMATION: R. Michael

APPLICANT: Roberts, R. Michael

APPLICANT: Green, Jonathan

APPLICANT: Kierulff, Susan

TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS

FILE REFERENCE: UY00003922

CURRENT APPLICATION NUMBER: US/56/106,188

NUMBER OF SEQ ID NOS: 56

SOFTWARE: Patent In Ver. 2.0

SEQ ID NO 42

TYPE: PRT

ORGANISM: bovidae

US-60-106-188-42

Query Match 98.8%; Score 1983; Db 27; Length 379;  
 Best Local Similarity 98.7%; Pred. No. 2.7e-05;  
 Matches 374; Conservative 3; Mismatches 3; Indels 0; Gaps 0;

Qy 1 MKWVLGVAFSECVIKPLQKQTKMTLSCKNMLANLKEHPIYLSQIFSGNSLII 60  
 Db 1 MKWVLGVAFSECVIKPLQKQTKMTLSCKNMLANLKEHPIYLSQIFSGNSLII 60  
 Qy 61 IPIRLNKLNVYGNITIGTPPOEVQVFTGSDGLVAFSCITMPACAPVWFQLOSTF 120  
 Db 61 IPIRLNKLNVYGNITIGTPPOEVQVFTGSDGLVAFSCITMPACAPVWFQLOSTF 120

Qy 121 OPTNKFTITTYGSSKMGFLATVTRIGDLVSTQDPGLSVYVEGLRGNTDOVGLNLP 180  
 Db 121 OPTNKFTITTYGSSKMGFLATVTRIGDLVSTQDPGLSVYVEGLRGNTDOVGLNLP 180  
 Qy 181 NISFSGAIPFDKLANQALISEPVAFYLSKNNQSGVYMGQVDRHYTKGLAMPLIE 240  
 Db 181 NISFSGAIPFDKLANQALISEPVAFYLSKNNQSGVYMGQVDRHYTKGLAMPLIE 240  
 Qy 241 ASGRYVMDIRSKMRTVACSGCEALVHTGSHIGDGLVNNHLLIRTPFDSKRY 300  
 Db 241 ASGRYVMDIRSKMRTVACSGCEALVHTGSHIGDGLVNNHLLIRTPFDSKRY 300  
 Qy 301 SCFATNLPSTPIFINGIKPYMTARAYIFGSRGCTYSAKFNTVYRSHETWILGDAFLR 360  
 Db 301 SCFATNLPSTPIFINGIKPYMTARAYIFGSRGCTYSAKFNTVYRSHETWILGDAFLR 360  
 Qy 361 RYFSVDFGNDRIGLARAY 379  
 Db 361 RYFSVDFGNDRIGLARAY 379

## RESULT 6

US-09-273-164-46

Sequence 42; Application US/09273164

GENERAL INFORMATION:

APPLICANT: Roberts, R. Michael

APPLICANT: Green, Jonathan

APPLICANT: Kierulff, Susan

TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS

FILE REFERENCE: UY00003922

CURRENT APPLICATION NUMBER: US/09/273,164

NUMBER OF SEQ ID NOS: 56

SOFTWARE: Patent In Ver. 2.0

SEQ ID NO 46

TYPE: PRT

ORGANISM: bovidae

US-09-273-164-46

Query Match 78.3%; Score 1571.5; Db 16; Length 380;  
 Best Local Similarity 78.2%; Pred. No. 1.2e-160;  
 Matches 297; Conservative 31; Mismatches 51; Indels 1; Gaps 1;

Qy 1 MKWVLGVAFSECVIKPLQKQTKMTLSCKNMLANLKEHPIYLSQIFSGNSLII 60  
 Db 1 MKWVLGVAFSECVIKPLQKQTKMTLSCKNMLANLKEHPIYLSQIFSGNSLII 60  
 Qy 61 IPIRLNKLNVYGNITIGTPPOEVQVFTGSDGLVAFSCITMPACAPVWFQLOSTF 119  
 Db 61 IPIRLNKLNVYGNITIGTPPOEVQVFTGSDGLVAFSCITMPACAPVWFQLOSTF 120  
 Qy 120 FQPNKFTITTYGSSKMGFLATVTRIGDLVSTQDPGLSVYVEGLRGNTDOVGLNLP 179  
 Db 120 FQPNKFTITTYGSSKMGFLATVTRIGDLVSTQDPGLSVYVEGLRGNTDOVGLNLP 180  
 Qy 181 NISFSGAIPFDKLANQALISEPVAFYLSKNNQSGVYMGQVDRHYTKGLAMPLIE 239  
 Db 181 NISFSGAIPFDKLANQALISEPVAFYLSKNNQSGVYMGQVDRHYTKGLAMPLIE 240  
 Qy 240 ASGRYVMDIRSKMRTVACSGCEALVHTGSHIGDGLVNNHLLIRTPFDSKRY 299  
 Db 240 ASGRYVMDIRSKMRTVACSGCEALVHTGSHIGDGLVNNHLLIRTPFDSKRY 300  
 Qy 300 VSCFATNLPSTPIFINGIKPYMTARAYIFGSRGCTYSAKFNTVYRSHETWILGDAFLR 359  
 Db 300 VSCFATNLPSTPIFINGIKPYMTARAYIFGSRGCTYSAKFNTVYRSHETWILGDAFLR 360  
 Qy 360 RYFSVDFGNDRIGLARAY 379  
 Db 360 RYFSVDFGNDRIGLARAY 379





```

Db 121 FLNWKNTFRITTSQGMKGVYHVDVIONLSTQDQFGLSTERYEGDRIYDQVGLN 180
Qy 180 PNIESGALPIFDNLKQALSEPVFAFLSKNKGWVYGVGDQYQTKGLNMLPLI 239
Db 181 PFLNSGALPIFDNLKQALSEPVFAFLSKNKGWVYGVGDQYQTKGLNMLPLI 240
Qy 240 EAGWVHMRIKSNRKYVIAKSDGCEALVITGTHSEGPORLVNHLIRTRFDSKY 299
Db 241 QAGWVHMRIKSNRKYVIAKSDGCEALVITGTHSEGPORLVNHLIRTRFDSKY 300
Qy 300 VSCFATKLPSTIFINGIKYPMARAYIFDSGRKCSAFENYVSRETWLGDAFL 359
Db 301 VSCFATKLPSTIFINGIKYPMARAYIFDSGRKCSAFENYVSRETWLGDAFL 360
Qy 360 RYFSVFDGNDIGLARAY 379
Db 361 RYFSVFDGNDIGLARAY 380

RESULT 10
US-09-791-537-82253
: Sequence 82253, Application US/0971537
: GENERAL INFORMATION:
: APPLICANT: Bionomix, Inc.
: INVENTOR: Danner, Joseph
: TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES OF PROTEIN FAMILIES AND FAMILY MEMBERS
: TITLE REFERENCE: METHODS OF USE THEREOF
: CURRENT APPLICATION NUMBER: US/09/791,537
: CURRENT FILING DATE: 2001-02-22
: NUMBER OF SEQ ID NOS: 153055
: SOFTWARE: patentin version 3.0
: SEQ ID NO 82253
: LENGTH: 380
: TYPE: PRT
: ORGANISM: Bos taurus
US-09-791-537-82253
Query Match
: Sequence Similarity 77.74; Score 1559.5; DB 21; Length 380;
: Matches 297; Conservative 28; Mismatches 54; Indels 1; Gaps 1;

Qy 1 MNWLVGLVAFSECVIKPLQVTKTKRLSKNKLANKLKHPIYLSQISFGSNLTI 60
Db 1 MNWLVGLVAFSECVIKPLQVTKTKRLSKNKLANKLKHPIYLSQISFGSNLTI 60
Qy 61 HPLNKLMLVYGNITITGPQEVQVFTDSSDLPWS-FCYMPACSAWPFRLQST 119
Db 61 HPLNKLMLVYGNITITGPQEVQVFTDSSDLPWS-FCYMPACSAWPFRLQST 120
Qy 120 FQTNKTRITTSQGMKGLAYTVRIGLVSTQDQFGLSVEGRVNDIGVGLN 179
Db 121 FLNWKNTFRITTSQGMKGVYHVDVIONLSTQDQFGLSTERYEGDRIYDQVGLN 180
Qy 180 PNIESGALPIFDNLKQALSEPVFAFLSKNKGWVYGVGDQYQTKGLNMLPLI 239
Db 181 PNIESGALPIFDNLKQALSEPVFAFLSKNKGWVYGVGDQYQTKGLNMLPLI 240
Qy 240 EAGWVHMRIKSNRKYVIAKSDGCEALVITGTHSEGPORLVNHLIRTRFDSKY 299
Db 241 QAGWVHMRIKSNRKYVIAKSDGCEALVITGTHSEGPORLVNHLIRTRFDSKY 300
Qy 300 VSCFATKLPSTIFINGIKYPMARAYIFDSGRKCSAFENYVSRETWLGDAFL 359
Db 301 VSCFATKLPSTIFINGIKYPMARAYIFDSGRKCSAFENYVSRETWLGDAFL 360
Qy 360 RYFSVFDGNDIGLARAY 379
Db 361 RYFSVFDGNDIGLARAY 380

RESULT 11
US-09-791-537-120793
: Sequence 120793, Application US/0971537
: GENERAL INFORMATION:
: APPLICANT: Bionomix, Inc.
: INVENTOR: Danner, Joseph
: TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES OF PROTEIN FAMILIES AND FAMILY MEMBERS
: TITLE REFERENCE: METHODS OF USE THEREOF
: CURRENT APPLICATION NUMBER: US/09/791,537
: CURRENT FILING DATE: 2001-02-22
: NUMBER OF SEQ ID NOS: 153055
: SOFTWARE: patentin version 3.0
: SEQ ID NO 120793
: LENGTH: 378
: TYPE: PRT
: ORGANISM: Bos taurus
US-09-791-537-120793
Query Match
: Sequence Similarity 77.38; Score 1553; DB 21; Length 378;
: Best Local Similarity 79.4%; Pred. No. 1.2e-158;

```

```

US-09-106-188-24
: Sequence 24, Application US/60106188
: GENERAL INFORMATION:
: APPLICANT: Roberts, R. Michael
: INVENTOR: Roberts, R. Michael
: APPLICANT: Xie, Sanchi
: TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
: TITLE REFERENCE: METHODS OF USE THEREOF
: CURRENT APPLICATION NUMBER: US/60/106,188
: CURRENT FILING DATE: 1998-10-28
: NUMBER OF SEQ ID NOS: 56
: SOFTWARE: Patentin Ver. 2.0
: SEQ ID NO 106188
: LENGTH: 380
: TYPE: PRT
: ORGANISM: Homo sapiens
US-09-106-188-24
Query Match
: Sequence Similarity 77.74; Score 1559.5; DB 27; Length 380;
: Matches 297; Conservative 28; Mismatches 54; Indels 1; Gaps 1;

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Qy 1 MNWLVGLVAFSECVIKPLQVTKTKRLSKNKLANKLKHPIYLSQISFGSNLTI 60
Db 1 MNWLVGLVAFSECVIKPLQVTKTKRLSKNKLANKLKHPIYLSQISFGSNLTI 60
Qy 61 HPLNKLMLVYGNITITGPQEVQVFTDSSDLPWS-FCYMPACSAWPFRLQST 119
Db 61 HPLNKLMLVYGNITITGPQEVQVFTDSSDLPWS-FCYMPACSAWPFRLQST 120
Qy 120 FQTNKTRITTSQGMKGLAYTVRIGLVSTQDQFGLSVEGRVNDIGVGLN 179
Db 121 FLNWKNTFRITTSQGMKGVYHVDVIONLSTQDQFGLSTERYEGDRIYDQVGLN 180
Qy 180 PNIESGALPIFDNLKQALSEPVFAFLSKNKGWVYGVGDQYQTKGLNMLPLI 239
Db 181 PNIESGALPIFDNLKQALSEPVFAFLSKNKGWVYGVGDQYQTKGLNMLPLI 240
Qy 240 EAGWVHMRIKSNRKYVIAKSDGCEALVITGTHSEGPORLVNHLIRTRFDSKY 299
Db 241 QAGWVHMRIKSNRKYVIAKSDGCEALVITGTHSEGPORLVNHLIRTRFDSKY 300
Qy 300 VSCFATKLPSTIFINGIKYPMARAYIFDSGRKCSAFENYVSRETWLGDAFL 359
Db 301 VSCFATKLPSTIFINGIKYPMARAYIFDSGRKCSAFENYVSRETWLGDAFL 360
Qy 360 RYFSVFDGNDIGLARAY 379
Db 361 RYFSVFDGNDIGLARAY 380

RESULT 12
US-09-791-120793
: Sequence 120793, Application US/0971537
: GENERAL INFORMATION:
: APPLICANT: Bionomix, Inc.
: INVENTOR: Danner, Joseph
: TITLE OF INVENTION: THREE DIMENSIONAL STRUCTURES OF PROTEIN FAMILIES AND FAMILY MEMBERS
: TITLE REFERENCE: METHODS OF USE THEREOF
: CURRENT APPLICATION NUMBER: US/09/791,537
: CURRENT FILING DATE: 2001-02-22
: NUMBER OF SEQ ID NOS: 153055
: SOFTWARE: patentin version 3.0
: SEQ ID NO 120793
: LENGTH: 378
: TYPE: PRT
: ORGANISM: Bos taurus
US-09-791-537-120793
Query Match
: Sequence Similarity 77.38; Score 1553; DB 21; Length 378;
: Best Local Similarity 79.4%; Pred. No. 1.2e-158;

```

Matches 300; Conservative 25; Mismatches 51; Indels 2; Gaps 2;

```

Qy 4 LVILGVAFSECTVILPQVWTKMTLSKKNKLNKRLKHPHLSQISFRGSNIHTPL 63
Db 1 LVILGVAFSECTVILPQVWTKMTLSKKNKLNKRLKHPHLSQISFRGSNIHTPL 60
Qy 64 RNINILVYGNITITGPQVDFVDTGSSDLPVPS-FCPCMSPACNWPWQLQSSTOP 122
Db 1 RNINILVYGNITITGPQVDFVDTGSSDLPVPS-FCPCMSPACNWPWQLQSSTOP 120
Qy 61 RNINILVYGNITITGPQVDFVDTGSSDLPVPS-FCPCMSPACNWPWQLQSSTOP 120
Db 1 RNINILVYGNITITGPQVDFVDTGSSDLPVPS-FCPCMSPACNWPWQLQSSTOP 120
Qy 123 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 181
Db 123 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 181
Qy 121 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 180
Db 121 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 180
Qy 181 ISFSGAIPFDNLKNGQALSEPVFATLSKKNKQSGVYMGQVQDHYTKGLNWLPIEA 241
Db 181 ISFSGAIPFDNLKNGQALSEPVFATLSKKNKQSGVYMGQVQDHYTKGLNWLPIEA 240
Qy 243 GRWVIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 301
Db 243 GRWVIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 300
Qy 241 GDMILIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 300
Db 241 GDMILIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 300
Qy 303 CFATKYLPTSTTINKTKYPMABAYIFDKRGRKYSAFENVTFSRETMILGDAFLR 361
Db 303 CFATKYLPTSTTINKTKYPMABAYIFDKRGRKYSAFENVTFSRETMILGDAFLR 360
Qy 362 YTSVFDNRDRIGLARAV 379
Db 362 YTSVFDNRDRIGLARAV 378
Qy 361 YTSVFDNRDRIGLARAV 378
Db 361 YTSVFDNRDRIGLARAV 378

```

```

RESULT 13
US-09-273-164-26
: Sequence 26, Application US/09273164
: GENERAL INFORMATION:
: APPLICANT: Green, Jonathan
: APPLICANT: Xie, Sancel
: TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
: CURRENT APPLICATION NUMBER: US/09/273,164
: CURRENT FILING DATE: 1999-03-19
: EARLIER APPLICATION NUMBER: 60/078,783
: EARLIER FILING DATE: 1998-10-28
: NUMBER OF SEQ ID NOS: 56
: SOFTWARE: PatentIn Ver. 2.0
: SEQ ID NO: 26
: TYPE: PRT
: ORGANISM: boidae
US-09-273-164-26

```

```

Query Match 77.3%; Score 1553; DB 16; Length 381;
Best Local Similarity 79.4%; Pred. No. 1,2e-158;
Matches 300; Conservative 25; Mismatches 51; Indels 2; Gaps 2;

Qy 4 LVILGVAFSECTVILPQVWTKMTLSKKNKLNKRLKHPHLSQISFRGSNIHTPL 63
Db 1 LVILGVAFSECTVILPQVWTKMTLSKKNKLNKRLKHPHLSQISFRGSNIHTPL 63
Qy 64 RNINILVYGNITITGPQVDFVDTGSSDLPVPS-FCPCMSPACNWPWQLQSSTOP 122
Db 1 RNINILVYGNITITGPQVDFVDTGSSDLPVPS-FCPCMSPACNWPWQLQSSTOP 120
Qy 123 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 181
Db 123 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 181
Qy 121 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 180
Db 121 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 180
Qy 181 ISFSGAIPFDNLKNGQALSEPVFATLSKKNKQSGVYMGQVQDHYTKGLNWLPIEA 241
Db 181 ISFSGAIPFDNLKNGQALSEPVFATLSKKNKQSGVYMGQVQDHYTKGLNWLPIEA 240
Qy 243 GRWVIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 301
Db 243 GRWVIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 300
Qy 241 GDMILIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 300
Db 241 GDMILIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 300

```

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Qy 242 GRWVIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 301
Db 242 GRWVIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 300
Qy 302 CFATKYLPTSTTINKTKYPMABAYIFDKRGRKYSAFENVTFSRETMILGDAFLR 361
Db 302 CFATKYLPTSTTINKTKYPMABAYIFDKRGRKYSAFENVTFSRETMILGDAFLR 360
Qy 304 CSANVLPTSTTINKTKYPMABAYIFDKRGRKYSAFENVTFSRETMILGDAFLR 363
Db 304 CSANVLPTSTTINKTKYPMABAYIFDKRGRKYSAFENVTFSRETMILGDAFLR 363
Qy 362 YTSVFDNRDRIGLARAV 379
Db 362 YTSVFDNRDRIGLARAV 381
Qy 361 YTSVFDNRDRIGLARAV 381
Db 361 YTSVFDNRDRIGLARAV 381

```

```

RESULT 14
US-09-273-164-26
: Sequence 26, Application US/09273164
: GENERAL INFORMATION:
: APPLICANT: Green, Jonathan
: APPLICANT: Xie, Sancel
: TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS
: CURRENT APPLICATION NUMBER: US/09/273,164
: CURRENT FILING DATE: 1999-03-19
: EARLIER APPLICATION NUMBER: 60/078,783
: EARLIER FILING DATE: 1998-10-28
: NUMBER OF SEQ ID NOS: 56
: SOFTWARE: PatentIn Ver. 2.0
: SEQ ID NO: 26
: TYPE: PRT
: ORGANISM: boidae
US-09-273-164-26

```

```

Query Match 77.3%; Score 1553; DB 27; Length 381;
Best Local Similarity 79.4%; Pred. No. 1,2e-158;
Matches 300; Conservative 25; Mismatches 51; Indels 2; Gaps 2;

Qy 4 LVILGVAFSECTVILPQVWTKMTLSKKNKLNKRLKHPHLSQISFRGSNIHTPL 63
Db 1 LVILGVAFSECTVILPQVWTKMTLSKKNKLNKRLKHPHLSQISFRGSNIHTPL 63
Qy 64 RNINILVYGNITITGPQVDFVDTGSSDLPVPS-FCPCMSPACNWPWQLQSSTOP 122
Db 1 RNINILVYGNITITGPQVDFVDTGSSDLPVPS-FCPCMSPACNWPWQLQSSTOP 120
Qy 123 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 181
Db 123 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 181
Qy 121 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 180
Db 121 TNKTFRTITGSSGKMGALDYVRIQDGVSTQDPGLSVYEGLEGR-NDGVGLGNTP 180
Qy 181 ISFSGAIPFDNLKNGQALSEPVFATLSKKNKQSGVYMGQVQDHYTKGLNWLPIEA 241
Db 181 ISFSGAIPFDNLKNGQALSEPVFATLSKKNKQSGVYMGQVQDHYTKGLNWLPIEA 240
Qy 243 GRWVIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 301
Db 243 GRWVIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 300
Qy 241 GDMILIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 300
Db 241 GDMILIMORISMKRTVITACSDCALVHTQTSIIGRGRKYSAFENVTFSRETMILGDAFLR 300
Qy 302 CFATKYLPTSTTINKTKYPMABAYIFDKRGRKYSAFENVTFSRETMILGDAFLR 361
Db 302 CFATKYLPTSTTINKTKYPMABAYIFDKRGRKYSAFENVTFSRETMILGDAFLR 360
Qy 304 CSANVLPTSTTINKTKYPMABAYIFDKRGRKYSAFENVTFSRETMILGDAFLR 363
Db 304 CSANVLPTSTTINKTKYPMABAYIFDKRGRKYSAFENVTFSRETMILGDAFLR 363
Qy 362 YTSVFDNRDRIGLARAV 379
Db 362 YTSVFDNRDRIGLARAV 381
Qy 361 YTSVFDNRDRIGLARAV 381
Db 361 YTSVFDNRDRIGLARAV 381

```

```

RESULT 15
US-09-273-164-48
: Sequence 48, Application US/09273164
: GENERAL INFORMATION:
: APPLICANT: Green, Jonathan
: APPLICANT: Xie, Sancel

```

: TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR EARLY PREGNANCY DIAGNOSIS

FILE REFERENCE: UVM0003/UVM0003P

FILE REFERENCE: OVM0003/OVM0003p  
CURRENT APPLICATION NUMBER: US/09/273.164

;; CURRENT APPLICATION NUMBER: US/09/273,;  
;; CURRENT FILING DATE: 1999-03-19

: CURRENT FILING DATE: 1999-03-19  
 : EARLIER APPLICATION NUMBER: 60/078-783

; EARLIER APPLICATION NUMBER: 60/078,783  
; EARLIER FILING DATE: 1998-03-20

EARLIER FILING DATE: 1998-03-20  
EARLIER APPLICATION NUMBER: 604106 199

; EARLIER APPLICATION NUMBER: 60/106,188  
; EARLIER FILING DATE: 1999-10-29

EARLIER FILING DATE: 1998-10-28  
NUMBER OF PGS TO MAG. 55

; NUMBER OF SEQ ID NOS: 56

: SOFTWARE: Pat

; SEQ ID NO 48

; LENGTH: 380

; TYPE: PRT

; ORGANISM: bov

Query Match 76 38: score 1532 5. DB 16. Length 380.

Query Match	76.3%;	Score 1532.5;	DB 16;	Length 380;
Best local similarity	77.6%;	Prod No 20-156;		

Best Local Similarity	77.6%;	Pred. No. 2e-156;					
Mstabc	705.	Concave	50.	Yedala	1.	Caco	1.
		75.	Micstake				

QY 1 MKWIVLLGLVAFSECIVKIPLRQVKTRKTLSGKNMLKNFLKEHPYRLSQISFRGSNLT 60

00 TITMSOV JSTOZKI JHJBT ANKNNOCSTIWNVWABWT ATYATOGS ABACOTCATWIN I 69

Year	Number of cases	Percentage of cases
1990	10	10.0
1991	15	15.0
1992	20	20.0
1993	25	25.0
1994	30	30.0
1995	35	35.0
1996	40	40.0
1997	45	45.0
1998	50	50.0
1999	55	55.0
2000	60	60.0
2001	65	65.0
2002	70	70.0
2003	75	75.0
2004	80	80.0
2005	85	85.0
2006	90	90.0
2007	95	95.0
2008	100	100.0
2009	105	105.0
2010	110	110.0
2011	115	115.0
2012	120	120.0
2013	125	125.0
2014	130	130.0
2015	135	135.0
2016	140	140.0
2017	145	145.0
2018	150	150.0
2019	155	155.0
2020	160	160.0
2021	165	165.0
2022	170	170.0
2023	175	175.0
2024	180	180.0
2025	185	185.0
2026	190	190.0
2027	195	195.0
2028	200	200.0
2029	205	205.0
2030	210	210.0
2031	215	215.0
2032	220	220.0
2033	225	225.0
2034	230	230.0
2035	235	235.0
2036	240	240.0
2037	245	245.0
2038	250	250.0
2039	255	255.0
2040	260	260.0
2041	265	265.0
2042	270	270.0
2043	275	275.0
2044	280	280.0
2045	285	285.0
2046	290	290.0
2047	295	295.0
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2063	375	375.0
2064	380	380.0
2065	385	385.0
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2067	395	395.0
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2070	410	410.0
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2072	420	420.0
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2074	430	430.0
2075	435	435.0
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2079	455	455.0
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2088	500	500.0
2089	505	505.0
2090	510	510.0
2091	515	515.0
2092	520	520.0
2093	525	525.0
2094	530	530.0
2095	535	535.0
2096	540	540.0
2097	545	545.0
2098	550	550.0
2099	555	555.0
2100		

Qy 61 HPLRIMNLVYVGNITIGTPPQEFQVVEDTGSSDLWVPS-FC<sup>T</sup>MPACSA<sup>P</sup>VWFRQLQSST 119

GO TO "FUNDAMENTALS OF THE FQV" FOR MORE INFORMATION

120 FOPNKTFTTYGSCSMKCFLAYDTVRIGDLVSTDPFGLSVVEYGLECRNYDGVGLNY 179

Db 121 FRHTQKVFNIKYNTGRMKGLLVYDTRIGDLVSTDQPFCSISLAEVGFDPFGVGLNY 180

Db 181 PNMSFGAIPIDNLKNEGAISEPVFAFYLSKDKREGSVVMFGVDHRYKCELNWVPLI 240

06Z TTHAAMHPOYITWHDABOJWAASQEWVUWSTFZBZJA ZFOCTUCOMUNNDZKJ#QNCJOUNI ZAT QD

[illegible]

Db 241 QAGGWTVHVDRI SMKRKI IACSGGCEALVDGTALIKGPRRLVNNIQKLIGTTPRGSKHY 300

[illegible]

Db 301 VSCSVVNTLPSIIETINGINYPVPARAYILKDESNCTTFFKENTVRTSRETWILGDVFP 360

Qy 360 RRYPSVEDRGNDRIGLARAV 379

Year	Number of cases	Rate per 100,000
1990	11	0.1
1991	11	0.1
1992	11	0.1
1993	11	0.1
1994	11	0.1
1995	11	0.1
1996	11	0.1
1997	11	0.1
1998	11	0.1
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2022	11	0.1
2023	11	0.1
2024	11	0.1
2025	11	0.1
2026	11	0.1
2027	11	0.1
2028	11	0.1
2029	11	0.1
2030	11	0.1

Search completed: April 2, 2003, 17:48:10

Job time : 147 secs









: PRIOR APPLICATION NUMBER: 60/331,822  
 : PRIOR FILING DATE: 2001-11-20  
 : NUMBER OF SEQ ID NOS: 56  
 : SOFTWARE: Patent In Ver. 2.0  
 : SEQUENCE LENGTH: 380  
 : TYPE: PRT  
 : ORGANISM: bovidae  
 PCT-US02-37236A-40

Query Match 75.3%; Score 151.5; DB 1: Length 380;  
 Best Local Similarity 76.8%; Pred. No. 7.6e-141; Indels 1: Gaps 1;  
 Matches 281, Conservative 30, Mismatches 36;  
 QY 1 MKWVLGVAFSECVIKFLPVKHTKTSKMKMLANFLKELHFLSLQISFSGSNIT 60  
 DB 1 MKWVLGVAFSECVIKFLPVKHTKTSKMKMLANFLKELHFLSLQISFSGSNIT 60  
 QY 61 HPLNMLVYVNTITGTPQEVVFTGSSGLAVS-CTWPCASAPVFRHQSS 119  
 DB 61 HPLNMLVYVNTITGTPQEVVFTGSSGLAVS-CTWPCASAPVFRHQSS 119  
 QY 62 LPEKSDLVNVAHITGTPQEVVFTGSSGLAVS-CTWPCASAPVFRHQSS 120  
 DB 62 LPEKSDLVNVAHITGTPQEVVFTGSSGLAVS-CTWPCASAPVFRHQSS 120  
 QY 120 FQTNKTTFTYSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 179  
 DB 120 FQTNKTTFTYSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 179  
 QY 121 FRLNFTKTSITGSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 180  
 DB 121 FRLNFTKTSITGSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 180  
 QY 180 PNISGSAIPFONLKNQALSEPVAFYLSKKNQSGVYMGQVYQYKELMIFLI 239  
 DB 180 PNISGSAIPFONLKNQALSEPVAFYLSKKNQSGVYMGQVYQYKELMIFLI 239  
 QY 181 PDSYSAIPFONLKNQALSEPVAFYLSKKNQSGVYMGQVYQYKELMIFLI 240  
 DB 181 PDSYSAIPFONLKNQALSEPVAFYLSKKNQSGVYMGQVYQYKELMIFLI 240  
 QY 240 EAGNVMHQRISKRTYKACDCEALVFTGSHIDGRCGVNVIHRLIFRPFDSKY 299  
 DB 240 EAGNVMHQRISKRTYKACDCEALVFTGSHIDGRCGVNVIHRLIFRPFDSKY 299  
 QY 241 EEDNVMHQRISKRTYKACDCEALVFTGSHIDGRCGVNVIHRLIFRPFDSKY 300  
 DB 241 EEDNVMHQRISKRTYKACDCEALVFTGSHIDGRCGVNVIHRLIFRPFDSKY 300  
 QY 300 VSCFATKLTFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 359  
 DB 300 VSCFATKLTFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 359  
 QY 301 YCSNVAUPLFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 360  
 DB 301 YCSNVAUPLFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 360  
 QY 360 RYFVSFDGRNDRIGLAAV 379  
 DB 360 RYFVSFDGRNDRIGLAAV 379  
 QY 361 RYFVSFDGRNDRIGLAAV 380  
 DB 361 RYFVSFDGRNDRIGLAAV 380

RESULT 11 : PCT-US02-37236A-40  
 : Sequence 52, Application PC/TUS0237236A  
 : GENERAL INFORMATION:  
 : APPLICANT: Lucy, Matthew C.  
 : TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS  
 : FILE REFERENCE: UNK00190  
 : CURRENT APPLICATION NUMBER: PCT/US02/37236A  
 : PRIOR APPLICATION NUMBER: 60/331,822  
 : PRIOR FILING DATE: 2001-11-20  
 : NUMBER OF SEQ ID NOS: 56  
 : SOFTWARE: Patent In Ver. 2.0  
 : SEQUENCE LENGTH: 380  
 : TYPE: PRT  
 : ORGANISM: bovidae  
 PCT-US02-37236A-40

Query Match 75.1%; Score 150.8; DB 1: Length 380;  
 Best Local Similarity 75.8%; Pred. No. 1.5e-140;  
 Matches 288, Conservative 33, Mismatches 36;  
 QY 1 MKWVLGVAFSECVIKFLPVKHTKTSKMKMLANFLKELHFLSLQISFSGSNIT 60  
 DB 1 MKWVLGVAFSECVIKFLPVKHTKTSKMKMLANFLKELHFLSLQISFSGSNIT 60  
 QY 61 HPLNMLVYVNTITGTPQEVVFTGSSGLAVS-CTWPCASAPVFRHQSS 119  
 DB 61 HPLNMLVYVNTITGTPQEVVFTGSSGLAVS-CTWPCASAPVFRHQSS 119

DB 61 HPLNMLVYVNTITGTPQEVVFTGSSGLAVS-CTWPCASAPVFRHQSS 120  
 QY 120 FQTNKTTFTYSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 179  
 DB 120 FQTNKTTFTYSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 179  
 QY 121 FRLNFTKTSITGSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 180  
 DB 121 FRLNFTKTSITGSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 180  
 QY 180 PNISGSAIPFONLKNQALSEPVAFYLSKKNQSGVYMGQVYQYKELMIFLI 239  
 DB 180 PNISGSAIPFONLKNQALSEPVAFYLSKKNQSGVYMGQVYQYKELMIFLI 239  
 QY 181 PDSYSAIPFONLKNQALSEPVAFYLSKKNQSGVYMGQVYQYKELMIFLI 240  
 DB 181 PDSYSAIPFONLKNQALSEPVAFYLSKKNQSGVYMGQVYQYKELMIFLI 240  
 QY 240 EAGNVMHQRISKRTYKACDCEALVFTGSHIDGRCGVNVIHRLIFRPFDSKY 299  
 DB 240 EAGNVMHQRISKRTYKACDCEALVFTGSHIDGRCGVNVIHRLIFRPFDSKY 299  
 QY 241 EEDNVMHQRISKRTYKACDCEALVFTGSHIDGRCGVNVIHRLIFRPFDSKY 300  
 DB 241 EEDNVMHQRISKRTYKACDCEALVFTGSHIDGRCGVNVIHRLIFRPFDSKY 300  
 QY 300 VSCFATKLTFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 359  
 DB 300 VSCFATKLTFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 359  
 QY 301 YCSNVAUPLFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 360  
 DB 301 YCSNVAUPLFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 360  
 QY 360 RYFVSFDGRNDRIGLAAV 379  
 DB 360 RYFVSFDGRNDRIGLAAV 379  
 QY 361 RYFVSFDGRNDRIGLAAV 380  
 DB 361 RYFVSFDGRNDRIGLAAV 380

RESULT 12 : PCT-US02-37236A-40  
 : Sequence 40, Application PC/TUS0237236A  
 : GENERAL INFORMATION:  
 : APPLICANT: Lucy, Matthew C.  
 : TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS  
 : FILE REFERENCE: UNK00190  
 : CURRENT APPLICATION NUMBER: PCT/US02/37236A  
 : PRIOR APPLICATION NUMBER: 60/331,822  
 : PRIOR FILING DATE: 2001-11-20  
 : NUMBER OF SEQ ID NOS: 56  
 : SOFTWARE: Patent In Ver. 2.0  
 : SEQUENCE LENGTH: 380  
 : TYPE: PRT  
 : ORGANISM: bovidae  
 PCT-US02-37236A-40

Query Match 75.0%; Score 150.5; DB 1: Length 380;  
 Best Local Similarity 73.3%; Pred. No. 1.4e-144;  
 Matches 283, Conservative 39, Mismatches 37;  
 QY 1 MKWVLGVAFSECVIKFLPVKHTKTSKMKMLANFLKELHFLSLQISFSGSNIT 60  
 DB 1 MKWVLGVAFSECVIKFLPVKHTKTSKMKMLANFLKELHFLSLQISFSGSNIT 60  
 QY 61 HPLNMLVYVNTITGTPQEVVFTGSSGLAVS-CTWPCASAPVFRHQSS 119  
 DB 61 HPLNMLVYVNTITGTPQEVVFTGSSGLAVS-CTWPCASAPVFRHQSS 119  
 QY 120 FQTNKTTFTYSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 179  
 DB 120 FQTNKTTFTYSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 179  
 QY 121 FRLNFTKTSITGSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 180  
 DB 121 FRLNFTKTSITGSSGKMLFAYTVRIGDLVSTQDPGLSVLEGKRMVDGVLG 180  
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 DB 180 PNISGSAIPFONLKNQALSEPVAFYLSKKNQSGVYMGQVYQYKELMIFLI 239  
 QY 181 PDSYSAIPFONLKNQALSEPVAFYLSKKNQSGVYMGQVYQYKELMIFLI 240  
 DB 181 PDSYSAIPFONLKNQALSEPVAFYLSKKNQSGVYMGQVYQYKELMIFLI 240  
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 DB 240 EAGNVMHQRISKRTYKACDCEALVFTGSHIDGRCGVNVIHRLIFRPFDSKY 299  
 QY 241 EEDNVMHQRISKRTYKACDCEALVFTGSHIDGRCGVNVIHRLIFRPFDSKY 300  
 DB 241 EEDNVMHQRISKRTYKACDCEALVFTGSHIDGRCGVNVIHRLIFRPFDSKY 300  
 QY 300 VSCFATKLTFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 359  
 DB 300 VSCFATKLTFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 359  
 QY 301 YCSNVAUPLFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 360  
 DB 301 YCSNVAUPLFTINGIKYPMARAYIFKDSGRGYSKAFKENTVRSRETWIGDAFL 360  
 QY 360 RYFVSFDGRNDRIGLAAV 379  
 DB 360 RYFVSFDGRNDRIGLAAV 379



Db 361 RUTSVFDRNDRIGLARAV 380

# RESULT 13

PC-TUS02-37236A-29  
 : Sequence 29, Application PC/TUS02027236A  
 : BEST LOCAL SIMILARITY 72.5%; Score 1449.5; DB 1; Length 379;  
 : REFERENCE: ONO001390; PC-TUS02/37236A  
 : APPLICANT: Mahalagan, Nagappan  
 : TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS  
 : CURRENT FILING DATE: 2002-11-20  
 : PRIOR APPLICATION NUMBER: 60/331,822  
 : PRIOR FILING DATE: 2001-11-20  
 : NUMBER OF SEQ. NOS.: 2  
 : SOFTWARE: Patent In Ver. 2.0  
 : SEQ ID NO 29  
 : LENGTH: 379  
 : ORGANISM: bovidae  
 : PC-TUS02-37236A-29

Query Match 72.5%; Score 1449.5; DB 1; Length 379;  
 Best Local Similarity 74.7%; Pred No 4e-138;  
 Matches 284; Conservative 34; Mismatches 60; Indels 2; Gaps 2;

Qy 1 MKWVTLGLAVASECIVKIPRKYVTHKTLISGRNKLKTLKEMPTRLSLSQISPSRNLTI 60  
 Db 1 MKWVTLGLAVASECIVKIPRKYVTHKTLISGRNKLKTLKEMPTRLSLSQISPSRNLTI 60  
 Qy 61 HPLANTMLNLYVGNITIGTPQFQVWFDGSDJAWPES-FCPMACSAFVWFKQSSST 119  
 Db 61 HPLANTMLNLYVGNITIGTPQFQVWFDGSDJAWPES-FCPMACSAFVWFKQSSST 119  
 Qy 60 HPLANTHOLYVGNITIGTPQFQVWFDGSDJAWPES-FCPMACSAFVWFKQSSST 119  
 Db 120 FQPMNTTITIGSSKMGFLAVDTVRIGLVSTQDFGLSVWVYGLGRNVDYGLWY 179  
 Qy 120 FQPMNTTITIGSSKMGFLAVDTVRIGLVSTQDFGLSVWVYGLGRNVDYGLWY 179  
 Db 121 SGLQNTFTSITGSSKMGFLAVDTVRIGLVSTQDFGLSVWVYGLGRNVDYGLWY 180  
 Qy 180 PNLSPSCAIPIDNLKNGQALISEPVATYLSKNKQSGVWFGVDYHQTGKELNMLPLI 239  
 Db 181 PNLSPSCAIPIDNLKNGQALISEPVATYLSKNKQSGVWFGVDYHQTGKELNMLPLI 239  
 Qy 240 PAGESVIMORISMKRVYTIACSDCALVPTQSHITGCRVLNNTIRLITIPDPSKH 359  
 Db 239 QAGESVIMORISMKRVYTIACSDCALVPTQSHITGCRVLNNTIRLITIPDPSKH 359  
 Qy 300 YSCFATVSLPSITITINGINLPVATYLSKNKQSGVWFGVDYHQTGKELNMLPLI 359  
 Db 299 YSCFATVSLPSITITINGINLPVATYLSKNKQSGVWFGVDYHQTGKELNMLPLI 358  
 Qy 360 RUTSVFDRNDRIGLARAV 377  
 Db 359 RUTSVFDRNDRIGLARAV 376

# RESULT 15

PC-TUS02-37236A-27  
 : Sequence 27, Application PC/TUS0237236A  
 : BEST LOCAL SIMILARITY 71.1%; Pred No 1.1e-128;  
 : REFERENCE: ONO001390; PC-TUS02/37236A  
 : APPLICANT: Mahalagan, Nagappan  
 : TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS  
 : CURRENT FILING DATE: 2002-11-20  
 : PRIOR APPLICATION NUMBER: 60/331,822  
 : PRIOR FILING DATE: 2001-11-20  
 : NUMBER OF SEQ. NOS.: 2  
 : SOFTWARE: Patent In Ver. 2.0  
 : SEQ ID NO 27  
 : LENGTH: 380  
 : ORGANISM: bovidae  
 : PC-TUS02-37236A-27

Query Match 69.1%; Score 1389.5; DB 1; Length 380;  
 Best Local Similarity 71.1%; Pred No 1.1e-128;  
 Matches 270; Conservative 36; Mismatches 73; Indels 1; Gaps 1;

Qy 1 MKWVTLGLAVASECIVKIPRKYVTHKTLISGRNKLKTLKEMPTRLSLSQISPSRNLTI 60  
 Db 1 MKWVTLGLAVASECIVKIPRKYVTHKTLISGRNKLKTLKEMPTRLSLSQISPSRNLTI 60  
 Qy 61 HPLANTMLNLYVGNITIGTPQFQVWFDGSDJAWPES-FCPMACSAFVWFKQSSST 119  
 Db 61 HPLANTMLNLYVGNITIGTPQFQVWFDGSDJAWPES-FCPMACSAFVWFKQSSST 119  
 Qy 120 FQPMNTTITIGSSKMGFLAVDTVRIGLVSTQDFGLSVWVYGLGRNVDYGLWY 179  
 Db 120 FQPMNTTITIGSSKMGFLAVDTVRIGLVSTQDFGLSVWVYGLGRNVDYGLWY 179  
 Qy 121 FLSRSTSTIGSSKMGFLAVDTVRIGLVSTQDFGLSVWVYGLGRNVDYGLWY 180  
 Db 180 PNLSPSCAIPIDNLKNGQALISEPVATYLSKNKQSGVWFGVDYHQTGKELNMLPLI 239

# RESULT 14

PC-TUS02-37236A-28  
 : Sequence 28, Application PC/TUS02027236A  
 : BEST LOCAL SIMILARITY 72.5%; Score 1449.5; DB 1; Length 379;  
 : REFERENCE: ONO001390; PC-TUS02/37236A  
 : APPLICANT: Mahalagan, Nagappan  
 : TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR ACCURATE EARLY PREGNANCY DIAGNOSIS  
 : CURRENT FILING DATE: 2002-11-20  
 : PRIOR APPLICATION NUMBER: 60/331,822  
 : PRIOR FILING DATE: 2001-11-20  
 : NUMBER OF SEQ. NOS.: 2  
 : SOFTWARE: Patent In Ver. 2.0  
 : SEQ ID NO 28  
 : LENGTH: 377  
 : TYPE: PRT  
 : ORGANISM: bovidae  
 : PC-TUS02-37236A-28

Query Match 72.5%; Score 1449.5; DB 1; Length 379;  
 Best Local Similarity 74.7%; Pred No 4e-138;  
 Matches 284; Conservative 34; Mismatches 60; Indels 2; Gaps 2;

Qy 1 MKWVTLGLAVASECIVKIPRKYVTHKTLISGRNKLKTLKEMPTRLSLSQISPSRNLTI 60  
 Db 1 MKWVTLGLAVASECIVKIPRKYVTHKTLISGRNKLKTLKEMPTRLSLSQISPSRNLTI 60  
 Qy 61 HPLANTMLNLYVGNITIGTPQFQVWFDGSDJAWPES-FCPMACSAFVWFKQSSST 119  
 Db 61 HPLANTMLNLYVGNITIGTPQFQVWFDGSDJAWPES-FCPMACSAFVWFKQSSST 119  
 Qy 60 HPLANTHOLYVGNITIGTPQFQVWFDGSDJAWPES-FCPMACSAFVWFKQSSST 119  
 Db 120 FQPMNTTITIGSSKMGFLAVDTVRIGLVSTQDFGLSVWVYGLGRNVDYGLWY 179  
 Qy 120 FQPMNTTITIGSSKMGFLAVDTVRIGLVSTQDFGLSVWVYGLGRNVDYGLWY 179  
 Db 121 SGLQNTFTSITGSSKMGFLAVDTVRIGLVSTQDFGLSVWVYGLGRNVDYGLWY 180  
 Qy 180 PNLSPSCAIPIDNLKNGQALISEPVATYLSKNKQSGVWFGVDYHQTGKELNMLPLI 239  
 Db 181 PNLSPSCAIPIDNLKNGQALISEPVATYLSKNKQSGVWFGVDYHQTGKELNMLPLI 239

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181 TNISPSAIPFYKLNKSGALSBEPFARYLKSDEKSSVWFGGADRYTKGELNPILM 240
QY 240 EACSNVHMORISMKRTYFACSGCEALWUCSTENIGORCLVNNIMLITFPDSKRY 299
DB 241 KAGMSVHMORISMKRKYFACSGCKALVUCSSDYVGPSTLVNIMKLGATPGSEHY 300
QY 300 VSCNATKYLPSITFIINGIYEMTARAYTKOSRKYSAKENTYFZSBETWLLGDAFL 359
DB 301 VSCNANSLPSITFIKSNMYFVPGQAYLKOSRRCFTAFKHOQSSTEMWLLGDVFL 360
QY 360 BRYTSVFORGRDGLGRANV 379
DB 361 RUYTSVFORGRDGLGRANV 380

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Search completed: April 2, 2003, 17:51:24  
 Job time : 33 secs